CHAPTER- 3

PLANT VARIETY PROTECTION

& LEGISLATION
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Plant Variety Protection & Legislation

3.1. The Indian response to International Legal developments

This chapter explores how proprietary claims to plant genetic resources (PGRs) are asserted and constructed in drafting India's Protection of Plant Varieties and Farmers’ Rights Act, 2001, and other laws. These claims have assumed significance, particularly during the past two decades, at global, national and local levels.

The protection of plant varieties by means of intellectual property rights has been a subject of increasing importance in the aftermath of the adoption of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs). Plant variety protection in TRIPs is premised on the need to provide incentives to private sector actors to engage in plant breeding. The ultimate rationale for plant variety protection is the enhancement of food security through the provision of new improved varieties and improved availability of seeds through private sector channels.

The introduction of plant variety protection in India has significant implications since seed has traditionally been supplied overwhelmingly by farmers themselves and by the public sector,

with the private sector playing a marginal role until recently in most crops. From a legal perspective, the protection of plant varieties remains an issue which is far from settled even though the Protection of Plant Varieties and Farmers' Rights Act was adopted in 2001 in compliance with TRIPs obligations. This is due to a number of reasons: Firstly, plant variety protection is an issue which goes beyond giving incentives to the private sector. In fact, while the TRIPs agreement is the direct trigger for the introduction of plant variety protection, it is not the only relevant treaty. The Biodiversity Convention and the International Treaty on Plant Genetic Resources for Food and Agriculture (PGRFA Treaty) are also of major importance. Secondly, while plant variety protection is directly related to innovation in the field of agriculture, it must also be understood in the broader context which includes conservation of biological resources. Thirdly, plant variety protection is opposed to the idea that agricultural management should be based on the sharing of knowledge and resources. This may be criticized from a conceptual and practical point of view. However, in the context of the widespread ratification of TRIPs and the increasingly tenuous nature of farmers' hold over their resources and knowledge, it is necessary to go beyond criticism and understand the additional requirements of the current international legal system with respect to the needs of farmers and more broadly of food security for all individuals.

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This chapter first looks at some of the reasons for introduction of plant variety protection and examines in particular the links with food security and the reasons for introducing plant variety protection measures. The second section surveys the property rights forms that have been proposed at the international level to provide plant variety protection and examines the existing legal regime in India with regard to plant variety protection. The third section argues that India needs to do more than it has done until now to implement a plant variety protection regime which truly fosters food security, provides traditional knowledge holders with secure property rights and rethinks farmers' rights in a broader context which takes into account the imperatives of food security and agro-biodiversity conservation alongside the already implemented focus on commercialization.

3.2.1. PLANT VARIETY PROTECTION AND FOOD SECURITY

Plant variety protection is intrinsically linked to food security. In fact, it can only be justified if it enhances food security. This section briefly explores the notion of food security before turning to the specific issue of plant variety protection.
A. Food Security

Food security can be understood at different level, from the household to the international level\(^3\). It is commonly held that at present there are sufficient food supplies at the international level\(^4\) and in the Indian context at the national level as well\(^5\). However, studies indicate that with increases in population, and diminishing land availability, international and national food security will be a major concern in coming years\(^6\). To achieve food security at the national level states require sufficient resources to either produce or import enough food to feed the whole population and an efficient distribution system to ensure everyone’s access. Ensuring food security at the household level implies that people must either have sufficient income to purchase food or the capacity to feed themselves directly by cultivating their own food.

Food security is directly linked to agro-biodiversity which is essential to promote resilience in farming. Reduction in diversity (through practices such as monoculture) increases vulnerability to natural forces, to pest/weed attack and other plant diseases\(^7\).

\(^3\) According to Paragraph 1 of the Plan of Action of the World Food Summit, Rome, 13-17 Nov. 1996, food security exists ‘when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life’.

\(^4\) See, e.g., Carl F. Jordon, Genetic Engineering, the Farm Crisis and World Hunger52 BIOSCIENCE 523, 526 (2002).


\(^7\) See for instance, M.S. Swaminathan, Ethics and Equity in the Use and Collection of Plant Genetic Resources: Some Issues and Approaches in International Plant Genetic Resources.
Therefore, agro-biodiversity is of primary importance for small-holder and/or subsistence farmers as it ensure both income-generation and household food security. Agro-biodiversity also provides ecosystem services on farms, such as pollination, fertility and nutrient enhancement, and insect and diseases management and water retention and thus makes for more productive farming, decreasing the number of the external inputs required. Additionally, agro-biodiversity provides the raw material (or the genetic pool) for all crop-related biotechnology research and development. Diversity also has nutritional and social importance, where different varieties may contain different nutrients and health benefits or may be of differing cultural worth.

Small-holder and traditional farmers have customarily practiced farming techniques which conserve and enhance agro-biodiversity. In order to maximize productivity and minimize risk they have made certain selections whereby they have preserved old varieties, invented new varieties and adapted existing varieties to suit their local environment, thereby enriching agro-biodiversity. As a result, the promotion of such farming is relevant, not just for household food security, but also for guaranteeing food security at national and international levels as well. It is essential therefore,

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Institute, ETHICS AND EQUITY IN CONSERVATION AND USE OF GENETIC RESOURCES AND SUSTAINABLE FOOD SECURITY 7 (1997).
that farmers retain control over plant varieties so that they may continue to innovate, improve and adapt varieties to suit changing needs and conditions\textsuperscript{10}. Additionally, since food security and access to food is also linked to adequate income, promotion of small-holder and labour-intensive farming is essential in developing countries like India, where a large percentage of people earn their livelihood from agricultural labour.

National policy plays a vital role in countering food insecurity. The principles emanating from the human right to food form an important basis for such a policy\textsuperscript{11}. One of the State's obligations with respect to the human right to adequate food is that it must proactively engage in activities to strengthen people's access to and utilization of resources and means to ensure their livelihood and food security\textsuperscript{12}. This includes measures such as land reform, ensuring physical and economic access to credit, natural resources, new technologies, rural infrastructure, irrigation, and provision of explicit farmers rights through legislation. Rigorous monitoring and planning by the State is required to ensure that cash crops do not replace food crops at the cost of food security. The State must also regulate private sector activities to ensure that they do not impinge on the resources of people who do not have access

\textsuperscript{10} See, e.g., objectives 3.1 and 3.4(d) of the Plan of Action supra n. 3.

\textsuperscript{11} The human right to adequate food has found expression in various international documents. See, e.g., Art. 11 of the International Covenant on Economic, Social and cultural Rights, New York, 16 Dec. 1996.

to sufficient food (which includes ensuring that private sector firms do not intrude on Farmers' Rights and that their activities sufficiently promote agro-biodiversity)\textsuperscript{13}. The State must also ensure that there is sufficient R&D in the area of under-utilised crops of high nutritional value\textsuperscript{14}.

**B. LAW AND POLICY RATIONALE FOR PLANT VARIETY PROTECTION**

At the outset, it must be mentioned that plant variety protection can have a narrow and broad meaning. The narrow view only considers plant variety protection from the point of view of commercial breeders and the needs of the biotechnology industry. The broader view acknowledges that there are different actors in plant variety management who deserve protection and who perform different functions, ranging from innovation (new seeds) to agro-biodiversity management.

India has had a number of reasons for introducing a plant variety protection regime. The most immediate trigger for the Plant Variety Act 2001 are the obligations undertaken in the WTO context, specifically under Article 27.3.b of TRIPs Agreement. Article 27.3.b of TRIPs imposes on all countries the introduction of some form of intellectual property protection for plant varieties. However, it does not impose the introduction of patents and

\textsuperscript{13} In fact failure by the State to regulate individuals or groups so as to prevent them from violating the right to food amounts to a violation of its obligations (see Paragraph 19 of the General Comment on Article 11. supra n. 12).

\textsuperscript{14} Objective 3.4, Plan of Action, Supra n.3.
therefore leaves member states free to devise their own legal framework in this regard (*sui generis* option). While WTO membership imposed a specific deadline on India for the introduction of plant variety protection, other factors are also at play. India has, for instance, been subjected several times to the appropriation of local knowledge through patents in foreign countries (also referred to as biopiracy) in the past few years. While the introduction of intellectual property rights in the field of genetic engineering may not provide a direct counter to biopiracy, it raises the profile of traditional knowledge as an issue worthy of debate and protection. Beyond issues specifically linked to biopiracy, the development of an intellectual property rights regime related to plant varieties is generally reflective of broader trends towards the appropriation through private property rights of resources and knowledge previously deemed to be freely available to all individuals and nations. The trend towards privatization of resources, knowledge and means of production has been tremendous in the past couple of decades. It finds expression in the field of agriculture with the progressive development of an international legal framework, which favours private ownership of genetically modified seeds over public access, and sharing of knowledge. This has, for instance, been reflected at the national level with the increase in incentives given to the private sector seed industry\(^{15}\).

\(^{15}\) *Seed Policy*, 1988.
Plant variety protection can be justified by necessity, or in other words by WTO membership. Other substantive reasons also help justifying plant variety protection both from the perspective of commercial breeders, farmers and agro-biodiversity conservation. As far as commercial breeders are concerned, the rationale for the introduction of plant variety protection is that it will promote food security because genetic engineering offers humankind its only chance to significantly increase yields in coming decades in view of the shortage of arable land to produce more food for an expanding population. Interestingly, the enhancement of food security is also an argument which can be used to justify Farmers' Rights on farmers' varieties since protection include the role that farmers play in sustainably using biodiversity and specifically in developing, conserving and enhancing agricultural biodiversity.

Within this general framework, several possibilities are open to the government. It can choose to protect only commercial breeders with the introduction of patents and be fully in compliance with its TRIPs obligations. It may choose to introduce plant breeders' rights and thereby provide rights which include some exceptions in favour of other breeders and farmers. It may further choose to grant rights only to breeders but introduce a benefit-sharing scheme which for instance, takes into account its obligations under the Biodiversity Convention. Finally, it can go beyond the preceding options and protect all relevant actors in the field of agricultural management, from farmers to local
communities and panchayats to commercial breeders and state
governments, an approach which takes into account not only TRIPs
obligations but also all other relevant international treaties.

3.2.2. LEGAL FRAMEWORK FOR PLANT VARIETY PROTECTION
AND MANAGEMENT

The legal framework for plant variety protection includes the
different treaties that India has ratified in this field and the different
legislative instruments adopted to implement international
commitments.

A. INTERNATIONAL LEGAL FRAMEWORK

India has taken different kinds of commitments in the field
of plant variety protection and management. These include a series
of obligations concerning the conservation and sustainable use of
biological resources as well as commitments concerning the
protection of traditional knowledge and Farmers' Rights and a
series of obligations in the field of intellectual property rights
regarding the commercial use of plant varieties.

Firstly, India has ratified the Biodiversity Convention which
provides the basic framework for the conservation and the use of
biological resources. It affirms India's sovereignty over its
biological resources but qualifies India's control with the
introduction of the notion of 'common concern' which implies that
the protection of biodiversity in India is of interest not only to this
country but also to the international community at large. The Biodiversity Convention is noteworthy for recognizing the need to conserve while also acknowledging the legitimacy of using biological resources which provide, for instance, every individual’s basic food needs. The Convention also provides that governments must preserve traditional knowledge and foster its application\textsuperscript{16}. While this provision does not mandate the recognition of the rights of traditional knowledge holders, it provides at least the lineaments of a policy framework in this regard. The Convention also regulates access to biological resources and the sharing of benefits arising from their use. It attempts to provide a framework which respects donor countries’ sovereign rights over their biological and genetic resources while facilitating access by users. Access must therefore be provided on ‘mutually agreed terms’ and is subject to the ‘prior informed consent’ of the country of origin\textsuperscript{17}. Further, the convention provides that donor countries of micro-organisms, plants or animals used commercially have the right to obtain a fair share of the benefits derived from use. Finally, the Convention constitutes one of the few treaties which offer a specific statement on the relationship between the management of biological resources and intellectual property rights. Article 16 clearly indicates that intellectual property rights are not to undermine the working of the Convention.

\textsuperscript{16} Art 8.j of the Biodiversity Convention.
\textsuperscript{17} Art 15 of the Biodiversity Convention.
Secondly, India has also ratified the PGRFA Treaty. This treaty adopts to a large extent the philosophy of the Biodiversity Convention and provides for the three interrelated goals of conservation, sustainable use and benefit sharing\textsuperscript{18}. The overall aims of the Treaty are the promotion of sustainable agriculture and food security. The Treaty is significant for radically altering the legal status of plant genetic resources in international law. While the previous instrument – the 1983 International Undertaking\textsuperscript{19} – promoted the sharing of plant genetic resources, the new Treaty affirms states' sovereign rights over their PGRFA and condones the introduction of intellectual property rights. One of the main contributions of the PGRFA Treaty to the international legal framework is its focus on the situation of farmers, their contribution to the conservation of agro-biodiversity, the rights they have over their physical assets – for instance, seeds – and to a much lesser extent the question of traditional knowledge. More specifically, the PGRFA Treaty gives recognition to farmers’ contribution to conserving and enhancing plant genetic resources for food and agriculture. It further gives broad guidelines to states concerning the scope of the rights to be protected under this heading but overall devolves the responsibility for realizing Farmers' Rights to member states. This includes the protection of traditional knowledge, farmers' entitlement to a part of benefit-

\textsuperscript{18} Art. 1 of the PGRFA Treaty.
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 farmers' rights over their landraces. In fact, the 'recognition' of farmers' contribution to plant genetic resource conservation and enhancement does not include any property rights. In this context, the only rights that are recognized are the residual rights to save, use, exchange and sell farm-saved seeds. The overall significance of the PGRFA Treaty lies in the fact that it is the first treaty providing a legal framework which not only recognizes the need for conservation and sustainable use of plant genetic resources for food and agriculture but also delineates a regime for access and benefit sharing and in this process provides direct and indirect links to intellectual property right instruments.

Thirdly, India was a founding member of the WTO and in this capacity must implement the TRIPs Agreement. TRIPs generally provides minimum levels of intellectual property rights protection in all member states. This has brought about a substantial burden of adjustment in the patents field because the Patents Act, 1970 differed in significant respects from what was required under TRIPs. Among the many changes that India has had to bring in, the introduction of plant variety protection called for by article 27.3.b of TRIPs has given rise to significant debate because of the choice it offers between adopting patents or a sui generis system. This choice has often been interpreted as implying that all
countries either have to introduce patents or plant breeders' rights closely related to patents which were first defined in the UPOV Convention\(^{20}\). These rights grant commercial breeders exclusive rights over their inventions but include more exceptions than patents, and in particular can include exceptions in favour of other breeders' research and in favour of farmers. While PBRs constitute one alternative to patents, the *sui generis* option is not limited to PBRs and can be construed in a number of different ways, thereby allowing countries to devise a plant variety protection regime which fits their specific needs and situation while taking their other obligations into account. The inclusion of the *sui generis* option is therefore of great significance within TRIPs because it allows member states to explore alternatives to patents beyond what Articles 7 and 8 allow\(^{21}\).

Overall, the international legal framework in the field of plant variety protection and management is characterized by its lack of cohesion. While on the one hand, the Biodiversity Convention and the PGRFA Treaty attempt to provide answers to the relationship between intellectual property rights and environment, the TRIPs Agreement addresses intellectual property rights issues without taking into account concerns regarding environmental

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\(^{21}\) Arts. 7 and 8 provide the broader framework within which the TRIPS Agreement must be understood and implemented and may constitute the legal basis for exceptions in favour of developing countries.
conservation or the management of traditional knowledge. Given that there is no international institution to ensure that different negotiations produce compatible treaties, the cohesion of different international obligations with each other must be mostly judged at the level of their implementation\textsuperscript{22}. This is why close scrutiny of implementation legislations is imperative to ensure that all international obligations are given similar importance, with the exception of fundamental rights which by constitutional mandate ought to be given more prominence than the rest.

**B. DOMESTIC LEGAL FRAMEWORK**

India is one of the first countries in the world to have evolved an intellectual property rights legislation simultaneously granting rights to both breeders and farmers. The protection of plant varieties and Farmers' rights Act, 2001, establishes a unique system by extending the concept of plant Breeders' Rights (PBRs) currently applied to new varieties of breeders, to varieties held by the farmers, NGOs, and public sector institutions. The law emerged from a process that attempted to incorporate the interests of various stakeholders, including private sector breeders, public sector institutions, nongovernmental organizations and farmers, within the property rights framework. The Protection of Plant Varieties and Farmers' rights Act 2001(Act 53 of 2001) constitutes the

\textsuperscript{22} The Convention on the Law of Treaties, Vienna, 23 May 1969, provides the basic framework for interpreting treaties, and includes provisions concerning the interpretation of different treaties addressing similar issues. It provides, for instance, that states must implement all their international obligations in good faith.
government's response to its obligations under Article 27.3.b of the TRIPs Agreement. The Act focuses on the establishment of plant breeders' rights and farmers' rights. The regime for plant breeders' rights largely follows the model provided by UPOV and the criteria for registration are the same as those found in UPOV, namely novelty, distinctness, uniformity and stability. The Act incorporates elements from the 1978 version of UPOV and includes some elements from the more stringent 1991 version such as the possibility to register essentially derived varieties.

The second main aim of the Act is the introduction of farmers' rights. At this level, substantial changes were proposed by the Joint Parliamentary Committee to which the Bill was referred after its introduction in Parliament. While the original version of the Bill introduced in Parliament only contained a short provision on farmers' rights, the Committee decided to add a whole new chapter on farmers' rights. As adopted, the Act seeks to put farmers' rights on a par with breeders' rights. It provides, for instance, that farmers can, like commercial breeders, apply to have a variety registered. Generally speaking, the Act envisages that farmers should be treated like commercial breeders and should receive the same kind of protection for the varieties they develop.

24 Section 16(1)(d) of the PROTECTION OF PLANT VARIETIES AND FARMERS' RIGHTS ACT 2001.
The Act provides two different channels for benefit sharing. Section 26 and Section 41 both provide opportunities for receiving financial compensation. The main difference between the two is that Section 41 specially targets village communities and provides less stringent procedural conditions. Thus, it neither provides a time frame nor specifies that claimants should pay a fee. In both cases, it is significant that the Authority has significant discretion in disposing of the benefit-sharing claims. Surprisingly, Section 41 comes closer to recognizing the intellectual contribution of the benefit claimers than Section 26. The former provides that claims can be made concerning the contribution to the evolution of a variety by a group while the latter only mentions the use of genetic material from the claimant variety as a basis for a claim. Further, while Section 26 requires the commercial utility and the demand for the variety in the market to be taken into account in the assessment of the claims, there is no such requirement under Section 41. The last major distinction is that Section 4 only provides for compensation to a community of individuals whereas a single person may benefit under Section 26. Over all, the existence of two partly overlapping, partly different regimes for benefit sharing is likely to be the cause of much confusion on the part of benefit-claimers and is unlikely to foster their claims for compensation. At a conceptual level, two main critiques can be raised against these benefit-sharing regimes.

25 See Ss. 26 and 41 of the PLANT VARIETY ACT.
First, they divert attention from the issue of providing property rights. Second, even in the limited sense of financial compensation, the burden of proof is on the claimants who finally remain dependent on the Authority's decisions.

On the whole, the new elaborate section on farmers' rights is progressive but further rethinking of the conceptual framework of the Act would be required to provide fully effective farmers' rights. This is first due to the fact that farmers' rights were only added as an afterthought to a regime based on the UPOV Convention. The criteria for registration of varieties were not rethought and still exclusively reflect the needs of registration for commercial breeders. Second, benefit sharing as envisaged does not contribute to strengthening the rights of farmers. It only fosters the recognition that actors who cannot apply for property rights should be offered some financial compensation.

The Biodiversity Act 2002 addresses some questions which are relevant for biodiversity management in general and plant variety management specifically. The main focus of the Act is on the question of access to resources. Its response to current challenges is to assert the country's sovereign rights over natural resources. It therefore proposes to put stringent limits on access to biological resources or related knowledge for all foreigners. The Act's insistence on sovereign rights reflects current attempts by

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26 The only substantive chapter of the BIOLOGICAL DIVERSITY ACT 2002 (Act 18 of 2003) – Chapter II – is entitled Regulation of Access to Biological Diversity.
various countries to assert control over the resources or knowledge they control. While the Act focuses on preserving India’s interests vis-à-vis other states in rather strong terms, its main impact within the country will be to concentrate power in the hands of the government. Indeed, Indian citizens and legal persons must give prior intimation of their intention to obtain biological resources to the state biodiversity boards\(^{27}\). The Act is even more stringent in terms of intellectual property rights since it requires that all inventors obtain the consent of the National Biodiversity Authority before applying for such rights\(^ {28}\). The impact of this clause is, however, likely to be limited since patent applications are covered by a separate clause\(^ {29}\). Further, the Authority has no extraterritorial authority.

Overall, the Biodiversity Act implicitly takes the position that India cannot do more than regulate access by foreigners to its knowledge base. It does, however, attempt to discipline the intellectual property rights system in some respects. As noted, it requires inventors who want to apply for intellectual property rights to seek the Authority’s permission. It also authorizes the Authority to allocate a monopoly right to more than one actor. Further the Authority is also entitled to oppose the grant of

\(^{27}\) S. 7 of the BIOLOGICAL DIVERSITY ACT.
\(^{28}\) S. 6 of the BIOLOGICAL DIVERSITY ACT.
\(^{29}\) Permission of the National Biodiversity Authority must be obtained before the scaling of the patent but can be obtained after the acceptance of the patent by the patent authority. See Section 6.1 of the BIOLOGICAL DIVERSITY ACT.
intellectual property rights outside India\textsuperscript{30}. The Act also seeks to address the question of the rights of holders of local knowledge by setting up a system of benefit sharing. The benefit sharing scheme is innovative insofar as it provides that the Authority can decide to grant joint ownership of a monopoly intellectual right to both the inventor and the Authority or the actual contributors if they can be identified\textsuperscript{31}. However, the sharing of intellectual property rights is only one of the avenues that the Authority can choose by way of discharging of its obligation to determine benefit sharing. It is also in the Authority’s power to allocate rights solely to itself or a contributor such as a farmer contributor. Other forms of benefit sharing include technology transfers, benefit claimers becoming associated with research and development or the location of production, research and development units in areas where this will facilitate better living standards to the benefit claimers.

Finally, plant variety protection is also influenced by the patent legislation. While the Patents Act as adopted in 1970 dealt with patents in general and was not specifically related to biological resources, it addressed a number of issues that are of relevance in the context of PGR management. It rejected, for instance the patentability of all methods of agriculture and was generally much more restrictive than similar laws in western countries. TRIPs has imposed significant alternations to this Act.

\textsuperscript{30} S. 18.4 of the BIOLOGICAL DIVERSITY ACT.
\textsuperscript{31} S. 21.2a of the BIOLOGICAL DIVERSITY ACT.
The Patents (Amendment) Act 2002 has generally modified the Act to allow compliance with TRIPs\textsuperscript{32}. The Amendment Act brings the duration of the rights to a uniform 20-year period and also substantially modifies the sections concerning the working of the patents by, for instance, doing away with licences of rights. The provision which seeks to oblige patentees to manufacture their inventions in India was also struck out because of the TRIPs requirements that imports should not be treated differently from products locally produced\textsuperscript{33}. With regard to environmental protection, the Amendment Act includes some of the TRIPs exceptions related to environment and health. It also addresses the question of biopiracy by imposing the disclosure of the source and geographical origin of the biological material used in a patented invention. Further, non-disclosure of the geographical origin or the anticipation of the invention in local or indigenous knowledge constitutes grounds for opposing or revoking a patent.

3.2.3. PLANT VARIETY PROTECTION FOR FOOD SECURITY

As noted above, there are a number of different actors involved in plant variety management, all with the ultimate aim of enhancing food security. Existing conditions indicate that while a significant segment of the overall population has easy access to sufficient food, there remain crores of people whose basic food

\textsuperscript{32} See PATENTS (AMENDMENT) ACT 2002.

\textsuperscript{33} Article 27 of the TRIPs Agreement.
needs are not met. In an economy where employment remains mostly in the agricultural sector, it is therefore of primary importance to make sure that the legal regime which is being set up favours access to food for the majority of poor people and fosters farmers' control over their land, crops and knowledge. This section argues that the current legal regime does not go far enough towards empowering farmers. Further, on the basis of the new PGRFA Treaty it argues that a broader conception of farmers' rights should be adopted with a view to fosters farmers' hold over their knowledge and with a view to comprehensively implement all international obligations in this field.

3.3.1. Assessment of the Current Legal Regime

The legal framework put in place until now can be looked at from two completely different angles. On the one hand, the Indian Plant Variety Act is among the most progressive plant variety protection legislations adopted by a developing country in furtherance of its TRIPs obligations. The apparent will to provide equal rights to commercial breeders and farmers is farsighted insofar as it indicates a clear understanding that the forces shaping globalisation require the assignment of property rights to all concerned actors in the different fields where appropriation is taking place. In particular, it is noteworthy for providing a clear acknowledgement that farmers' rights can be conceived as intellectual property rights, in exactly the same way as other products of human creativity. On the other hand, it appears quite
likely that the chapter of farmers' rights will not be implemented. Firstly farmers' rights were introduced as an afterthought to the first draft which contained only rudimentary farmers' rights. The Act provides only one set of criteria for registration – which are the criteria taken from the UPOV Convention for the protection of commercial breeders' varieties – and as a result, it will be extremely difficult for farmers to register their varieties even though they are entitled to it. Secondly, the decision of the Government to formally join UPOV will at least put pressure on the Plant Variety Authority to favour commercial breeders over farmers and at worst may lead to the Authority either formally or informally not implementing the provisions of the Act concerning farmers' rights. As a result, though this Act theoretically recognises farmers' rights, a lot remains to be done for farmers' rights to become a reality in the form of intellectual property rights. The protection of traditional knowledge is also taken up in the Biodiversity Act which focuses on the appropriation of Indian traditional knowledge by foreigners but does not empower holders of traditional knowledge with rights to stop unwanted appropriation within the country. Another shortcoming of the Plant Variety Act is that, though TRIPs compliant insofar as it provides for a *sui generis* option within the narrow confines of Article 27.3.b of TRIPs, it only deals with plant variety management from the point of view of their commercialization and fails to take into account the fact that commercial activities cannot be separated, either legally or in
practice, from the conservation of agricultural biodiversity, the rights of farmers and that of the state.

Apart from the specific problems concerning farmers' rights, the current legal framework is fraught with inconsistencies which are linked to the different origins of the Acts. Each of the three legislatives instruments examined above have been individual responses to specific international obligations which have been addressed by different ministries and departments according to the main focus of the concerned treaty. The result is a legal framework which lacks a sense of unity and purpose and instead comprises a collection of defensive responses to international commitments, rather than a cohesive strategy to address internal problems. Consequently, there are, for instance, a number of overlaps between the benefit-sharing regimes proposed in the Biodiversity Act and the Plant Variety Act while the Patents Act does not even acknowledge the issue of benefit-sharing despite the fact that benefit-sharing is on the whole a direct consequence of the introduction of intellectual property rights in the agricultural field. Some of the other shortcomings of the PVPFR Act are as follows:

I. The PVP Act provides for farmers' rights and allows farmers to save, use, sow resow, exchange, share or sell his farm produce including seed of a variety protected under this Act in the same manner as he was entitled before the coming into force of this Act. But they are not allowed to sell branded seed
of variety protected under this Act. And Branded seeds means ‘any seed put in package or any other container and labeled in a manner indicating that such seed is of a variety protected under this Act’. Given case law in Plant Variety Protection, even “brown bagging” and farmers exchange has been treated as “commercial” sale by seed corporations. This clause could thus undermine farmers' rights rather than protect it, unless a genuinely independent *sui generis* law on farmers' rights is evolved.

II. The criteria for registration of extant varieties and farmers varieties, however, is not entirely clear is the Act. The Act proposes that it would be based on distinctiveness uniformity and stability[^34] as defined by the authority. The authority is yet to provide such definitions and this will be a crucial factor in determining whether farmers would actually be able to register their varieties.

III. Monopolies over seed production: Through the PVP Act, the Multinational Seed Companies are seeking total control of seed, the first link in the food chain and through control over seed, they control the food system. If all farmers who are the original breeders, could be forced into the market every year, the seed industry will have a $7.5 billion market[^35]. The impact of the new seed law needs to be assessed in the context of the

[^34]: S15 of the Plant Variety Act, 2001.
[^35]: The need for genuine *Sui Generis* Law to defend Farmers Rights as Traditional breeders: Dr. V. Shiva & Afsar H Jafri (From Internet, www.vshiva.net).
monopolies already in place in the industrialized countries. Even in India, where many companies seem to be making Bt. Cotton, the intellectual property rights to Bt. Gene are in the hand of one company, Monsanto\textsuperscript{36}. IPRs on seed are thus creating seed monopolies. Not only is the seed industry gaining total control over seed supply, it is also getting increasingly concentrated. The PVP Act would prove to be an effective tool through which the consolidation of seed companies over Indian agriculture would be accomplished. The stronger the rights of TNCs, the weaker are the rights of farmers since it is the erosion of farmers' rights which create MNC's monopolies.

IV. "Benefit Sharing", as an instrument to undermine farmers' rights: The Act pays lip service to the idea of royalty payment to farmers when their varieties are used for breeding new variety through the mechanism of "benefit sharing". Instead of farmers' rights being recognized as collective, community rights derived from their having evolved traditional varieties collectively and cumulatively, benefit sharing replaces farmers' rights with rights of the seed industry, with farmers receiving a small payment. Which farmers will be paid and the amount of payment is left to a District Magistrate. However, given the fact that farmers' varieties have been developed by

\textsuperscript{36} Ibid P5.
millions of farmers across large geographical regions, it is difficult, even in well-structured system to identify the beneficiaries and distribute equitably the benefits among them. Moreover the system of benefit sharing is very unreliable. The benefit sharing is made subject to the commercial utility of the “new” derived variety\(^\text{37}\). Moreover the benefit will be recovered as an arrear of land revenue by the District Magistrate within whose jurisdiction the breeder liable for such benefits sharing resides\(^\text{38}\). However, seed corporations which control IPRs are not producers, hence this mechanism is flawed at its very roots. Since most of the seeds are being bred by the Multinational seed companies with their headquarter in a foreign land, in this case who would recover the benefit from the breeders? Moreover the benefit sharing is made subject to claim if any\(^\text{39}\). If no one makes claim for benefit sharing, there is no voluntary recognition of benefit sharing by the breeder or the Authority based on the passport data. Keeping in mind the literacy status of our farmers as well as the access to Government Gazzette, most of the cases of biopiracy would go unnoticed. The alternative is to recognize farmers as breeders and protect their community rights to their collective, cumulative innovation through a genuinely \textit{sui generis} law made for protection of traditional knowledge.

\(^{37}\) Section 26 (5) (b) of the Plant Variety Act 2001.
\(^{38}\) Section 26 (7) of the Plant Variety Act 2001.
\(^{39}\) Section 26 (2) of the Plant Variety Act 2001.
V. Very Harsh Penalties for Farmers: While the breeders are provided with very strong protection, the Act provides for very harsh punishment to farmers (violators) for the infringement of breeders rights. The penalties are prescribed not only for copying the packaging but also the registered name or denomination of the registered variety or giving their variety a denomination deceptively similar to the registered variety. The breeders' rights are so strong that even in the case of the slightest doubt of violation or infringement on the part of the breeders, the onus of proving the innocence is upon the alleged violators (farmers). Whether it is the case of demanding benefits for using their variety or for proving innocence for infringement of breeders' rights, the onus is put on the poor farming community. If a violator fails to prove that he acted in innocence, the penalty is very harsh which also includes jail term. If a person applies any false denomination to a variety or misrepresent the address of the breeder of a variety registered under this Act in course of trading such variety, he shall be punished with imprisonment for a term not less than three months but may extend to two years, or fine which shall not be less than fifty thousand rupees but which may extend to five lakh rupees, or both. In case of repetition of violation, the minimum jail term is one year which may extend to three years and the fine form two

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40 S 64 of the Plant Variety Act 2001.
41 S 70 of the Plant Variety Act 2001.
lakhs which may extend to 20 lakhs rupees or both\textsuperscript{42}. The rights of the farmers to claim benefit for use of their variety is very weak in comparison to the rights of the breeders for protection of their knowledge. Given the cases of biopiracy such as “basmati,” “neem”, “turmeric” etc. farmers cultivating their own varieties could be treated as violators given the reversal of burden of proof. The only safeguard is a \textit{sui generis} law on traditional knowledge, which protects farmers' rights and their freedom to use their seeds and innovations without threat from corporate pirates. Corporations are misusing IPRs to criminalise innocent farmers as the case of Percy Schmeiser shows.\textsuperscript{43}

VI. No Corporate liability, No Protection for Farmers against Seed Failure: The PVP Act 2001 does not provide any strong protection to the farmers in case of failure of registered varieties. In view of failure of Bt.Cotton, the farmers of Warangal suffered a loss of Rs. 16,657 per hectare\textsuperscript{44} and no compensation was paid to the victim farmers as yet. The Act provides that “…if such propagating material fails to provide such performance under such given conditions as the farmer or the group of farmers or the organization of farmers, as the case may be, may claim compensation in the prescribed

\textsuperscript{42} S73 of the Plant Variety Act 2001.
\textsuperscript{43} Monsanto Canada Inc. v Schmeiser, Supreme Court of Canada. Judgment dt.21\textsuperscript{st} May 2004(2004)SCC34.
\textsuperscript{44} National Herald, New Delhi 9\textsuperscript{th} June 2003
manner before the Authority and the Authority shall after giving notice to the breeder of the variety and after providing him an opportunity to file opposition in the prescribed manner and after hearing the parties, it may direct the breeder of the variety to pay such compensation as it deems fit, to the farmer or the group of farmers or the organization of farmers, as the case may be. This protection is very weak and cannot act as a deterrent. The frequent seed failure and the suicides of farmers due to the loss of crops demands a severe punishment to the breeder in case of failure of their seeds or propagating materials. The absence of liability clause and the replacement of a locally accessible justice system by centralized Authority increases the power of seed corporations and robs the farmers of any reliable access to claims for compensation and holding corporation liable for seeds failure and false claims.

VII. Very weak Researchers Rights: The PVP Act seeks to restrict the rights of the researchers and broadens the rights of the plant breeders. Researchers have to take permission of the breeders for repeated use of a protected variety as parental lines. It says “the authorization of the breeder of a registered variety is required where the repeated use of such variety as a parental line is necessary for commercial production of such other newly developed variety”. No breeder would ever authorize others for repeated use of his/her protected variety.

for commercial propagation. And no researcher would ever do research on a variety if he cannot commercialize it. Hence, the Act restricts the researchers' rights and grants extended monopoly to the breeder. The Act thus negates the right to free access to protected varieties for further development of new improved varieties, and also negates any true competitiveness, which would reduce the price of seeds.

3.3.2. The need for a broader conception of farmers' rights

The preceding section indicates that there are some general and some specific problems in the adopted legal regime for plant variety management and protection. A number of these problems are of a technical nature and relate, for instance, to the lack of coordination between the different Acts. One more substantive issue is the question of farmers' rights or the rights of farmers over their traditional knowledge. The need to find a more comprehensive answer to this issue has been made more pressing with the ratification by India of the new PGRFA Treaty. The importance of this treaty is linked to the fact that it directly links biodiversity conservation, biodiversity use and farmers' rights and to the fact that it constitutes a direct response to the introduction of intellectual property rights in agriculture through patents and plant breeders' rights.

The existence of different treaties separately addressing plant variety management and protection makes their joint
implementation an onerous task for member states. This process must, however, be undertaken because this is exactly what international law requires, and because this constitutes one important avenue to foster food security at all levels within the country.

Given that the emphasis at the international level has generally been on defining and strengthening the rights of exclusively commercially minded actors through patents and plant breeders' rights, the definition of a broader regime need not add much to existing and well-developed rights. It should rather focus on farmers' rights and the mainstreaming of biodiversity management and traditional knowledge protection. Starting with international obligations, the necessity to redraft farmers' rights to make them effective has been made more pressing following the ratification of the PGRFA Treaty. While the TRIPs agreement makes no mention of the necessity to protect farmers' rights, the PGRFA Treaty—while not defining farmers' rights at the international level—specifically puts the onus on member states to make farmers' rights a reality. A few of the substantive elements that make up farmers' rights are indicated in the Treaty. These include, the protection of traditional knowledge, equitable benefit sharing, and the right to participate in decisions concerning the management of plant genetic resources. In other words, the Treaty steers countries towards recognizing the need for giving farmers

46 Art. 9.2 of the PGRFA Treaty.
control over their knowledge for reasons of justice as well as to foster sustainable use and conservation of plant genetic resources. However, it leaves member states free to decide on the most appropriate framework for the same. There are a number of other elements in the PGRFA Treaty which point the direction for further work in the area, both in domestic and international law. The access and benefit-sharing regime instituted under the PGRFA Treaty is, for instance, much more developed and comprehensive than the one under the Biodiversity Convention. The PGRFA Treaty also indirectly highlights that it is difficult to distinguish biological resources, genetic resources and related knowledge. Indeed, the definition of genetic resources under the Treaty includes reproductive and vegetative propagating material that contains functional units of heredity. More broadly, the Treaty links plant genetic resource conservation, intellectual property rights, sustainable agriculture and food security.

47 Art. 2 of the PGRFA Treaty.