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“IPRS AND PLANT VARIETIES: CONFLICT OR SYNERGY?”

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ABSTRACT

There are a number of concerns in respect to the potential impacts of the patenting of food and farming crops on agricultural livelihoods and the ability of poor people to feed themselves in developing countries. This study provides a comprehensive overview of the international intellectual property system regulating plant varieties and the rights of plant breeders, including the policies supporting the grant of intellectual property rights, the institutions that have shaped the international intellectual property system and the basic components contained in the relevant international treaties. This article looks at some of the reasons for the introduction of plant variety protection and examines in particular the links with food security and the reasons for introducing plant variety protection measures, along with some of the potential impacts of the Trade Related Intellectual Property Rights (TRIPs) Agreement of the World Trade Organisation (WTO). And in particular the authors would focus on the impact of Intellectual Property Rights (IPR) regime on small farmers and food security in developing countries. Part I of the study reviews rationales for granting intellectual property rights in new plant varieties and the policy objectives that may be in tension with such rights. It includes the identification of the international institutions and intergovernmental organizations that regulate intellectual property rights in plant varieties and plant genetic resources generally, and describes the core obligations set forth in international intellectual property agreements. Part II discusses the provisions of the relevant international intellectual property agreements in greater detail. These agreements include the 1991 and 1978 Acts of the *Union internationale pour la protection des obtentions végétales* (“UPOV”), which protect plant breeders’ rights, and the 1994 Agreement on Trade Related Aspects of Intellectual Property Rights (“TRIPs”), which permits World Trade Organization Members to protect plant varieties with either patents or a *sui generis* system of intellectual property protection. Part II also includes a discussion of so-called “TRIPs plus” bilateral and regional agreements as they relate to plant variety protection. The existing Indian Patent Act, 1970 excluded agriculture and horticultural methods of production from patentability. Part III critically analyses the provisions of legislations for their effective implementation. It also looks to the future and considers the ‘Doha Round of trade negotiations’ now under way at the World Trade Organization as well as the International Treaty on Plant Genetic Resources for Food and Agriculture, which entered into force in June 2004. It explains

how these two developments may lead to a revision of existing legal rules and policy options for national governments in the area of plant variety protection and it explores the possibilities for harmonizing conflicting treaty commitments. This study makes the case for the maintenance of an exception to patentability for plant varieties. It examines what has been proposed both in the governmental and non-governmental sectors. It ends with the argument that how India needs to do more it has done until now to implement a plant variety.

INTRODUCTON

"Intellectual Property is the oil of the 21st century" - this quote by Mark Getty, chairman of Getty Images, one of the world's largest Intellectual Proprietors, offers a unique perspective on the current conflicts around copyrights, patents and trademarks. Not only does it open up the complete panorama of conceptual confusion that surrounds this relatively new and rather hallucinatory form of property - it must also be understood as a direct declaration of war. The importance of plant genetic resources for agriculture to human welfare and the world economy is incalculable. According to Stephen Brush, plant genetic resources provide "the foundation of all food production and the key to feeding unprecedented numbers of people in times of climate and other environmental change" and therefore comprise perhaps the most important category of biological resources. The relationship between intellectual property protection and international trade has been one of the most controversial issues in global negotiations in recent years. The debate has largely about the implications of the agreement on the Trade-related Aspects of Intellectual Property Rights (TRIPS) under the World Trade Organization (WTO) for international trade in general, and for developing countries in particular.

Plant varieties protection in form of plant breeders right has been in existence in industrialized countries for a long time. From the 1920s a number of European Countries have recognized various kinds of plant breeders' rights. From the 1930s, plant varieties were admitted to patent protection in the United States and Germany and subsequently many developed countries.¹The Protection of Plant Varieties by means of intellectual property rights has been subject of increasing importance in the aftermath of the adoption of the Agreement on Trade Related

¹ M.BLAKENEY, *Trade Related Aspects of Intellectual property Rights: A Concise Guide to the TRIPs Agreement*, Sweet & Maxwell, 1996, London, p 21.

Aspects of Intellectual property Rights (TRIPs).² The ultimate rationale for plant variety protection is the enhancement of food security through the provision of new improved varieties and improves availability of seeds through private sector channels. Farming communities have a well established practice of saving exchanging and replanting seeds which may be restricted under plant breeders' rights. Accordingly, the recognition and the grant of an intellectual property right to the breeder of new plant variety is not welcomed in a large number of developing countries.³ The TRIPs Agreement leaves to each country's discretion whether to protect new plant varieties by means of patent or by effective *sui generis* system or by any combination thereof. Farmers in developing countries usually possess traditional knowledge and use traditional techniques to manage and develop new crop types and biodiversity conservation. They have been playing a major role in the conservation of plant genetic resources and transmission of these resources to seed companies, plant breeders and research institutions.⁴ Traditional farmers and indigenous people around the world have been seeing their plant genetic resources (PGRs) and traditional knowledge (TK) monopolized by private enterprises under patents and plant breeders' rights and have not been receiving their equitable share of benefits for their contribution⁵. These concerns led to the adoption of two United Nations binding international treaties, the Convention on Biological Diversity (CBD), the first global agreement on the conservation and sustainable use of biological diversity, signed at the 1992 Earth Summit in Rio de Janeiro, and the International Treaty on Plant Genetic Resources for Food and Agriculture (PGRFA), adopted on 3 November 2001 under the auspices of the FAO, which recognizes the enormous contribution that farmers and their communities have made and continue to make to the conservation and development of genetic resources.

PART I

LAW AND POLICY RATIONALE FOR PLANT VARIETY PROTECTION

² Agreement on Trade Related Aspects of Intellectual Property Rights, Marrakech, 15 Apr. 1994, 33 International Legal Materials 1197 (1994) [hereafter TRIPs Agreement].

³ T. KONGOLO, *New Options for African Countries regarding Protection for New Varieties of Plants*, 4 *JWIP*, 2001 p.349.

⁴ M.BLAKENEY, *Regulating Access to Genetic Resources*, International Association for the Advancement of Teaching and Research in Intellectual Property Congress (ATRIP), New Delhi, India, 6-8 October 2002, para.1

⁵ P. C. .MARIN, *Providing Protection for Plant Genetic Resources . Patents Sui generis System and Bio-partnerships*, Kluwer Law international, 2002, New York, p.1

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 the TRIPs Agreement. Article 27.3.b of TRIPs imposes on all countries the introduction of some form of intellectual property protection for plant varieties. The importance given to the protection and sustainable management of plant and animal varieties is linked to the fact that they constitute the basis for humankind's food needs. The diversity of plant varieties is of fundamental importance since the loss of genetic diversity can have grave consequences as illustrated, for instance, by the great Irish Famine of the mid-19th century. Plant Varieties have traditionally been developed and nurtured by a variety of actors. Smallholder, farmers, herders and artisanal fisher-folk have often played the most crucial role in conserving and enhancing agro-biodiversity. They have for instance, developed crop varieties specifically suited to their diverse local environment.⁶ In recent times, the development of new varieties has been undertaken a larger scale and has become a major industrial activity.⁷ In practice plant varieties are identified through their seeds, which constitute a main focus of interest for all actors involved in their management. While seeds have traditionally been freely exchanged among all types of breeders, there have been moves towards restricting the flows of knowledge. This has been accompanied by development of forms of legal protection of this knowledge. IPRs in plant varieties provide some assurance to breeders that they will be able to recoup the risks and costs of a value-added innovation that is based upon an underlying biological resource.⁸ Ultimately, however, the grant of exclusive rights to plant breeders is designed to benefit the society granting the rights. It provides an incentive for private research and development into new breeding techniques, thereby reducing the need for government funding to subsidize these activities. It encourages the development of new and beneficial plant varieties for use by farmers and consumers. And it furthers the society's development of agriculture, horticulture and forestry. An international system of IPR protection for plant varieties expands these benefits by facilitating access to new varieties created in other states. Once breeders are assured that their rights will be protected in other states, breeders will be more

⁶Jose Esquinas-Alcazar, *The Realisation of Farmers Right*, in M.S Swarminathan, ed. *Agrobiodiversity and Farmer's Rights*, Konark Publishers, Delhi 1996, p.2.

⁷Carlos M. Correa, *Access to Genetic Resources*, 2010 Comp.3.p57 (1997).

⁸ *Lesser* 1997; OECD 1996

willing to make their new varieties available in those states. This benefits farmers, consumers and researchers in many more jurisdictions.⁹

Specific policy objectives in tension with IPRs

Having identified the principal institutions and agreements relating to plant genetic resources, the next sections address specific critiques of IPRs as applied to plants and plant varieties and the policy arguments that inform those critiques.

- Preserving genetic diversity

Granting IPRs to plant breeders has uncertain consequences for preserving plant genetic diversity. A number of commentators have argued, however, that diversity is eroded rather than enhanced by granting IPRs to plant breeders. According to this view, *in situ* conservation by indigenous farmers diminished as they began to rely on commercial plant breeders for seeds and other propagating material. Rather than using informal breeding techniques to experiment with the creation of new varieties suitable for local growing conditions, indigenous farmers came to depend upon third party plant breeders to provide them with seeds possessing uniform genetic characteristics. The plant varieties that have come to dominate agriculture as a result of this dependence may possess many beneficial characteristics, but they do not enjoy the adaptive abilities of less well known and informally bred varieties.¹⁰

- Farmers' rights

A second challenge to IPRs concerns the relationship between farmers' rights and IPRs in plant varieties. The concept of farmers' rights was developed to reflect the contributions that traditional farmers, particularly in the developing world, have made to the preservation and improvement of plant genetic resources. Farmers' rights are in tension with IPRs for plant breeders because many farmers and farming communities do not claim exclusive rights in the cultivated landraces (also known as traditional cultivars) and plant varieties they have cultivated

⁹ Lesser, 1997, pp. 8 and 10.

¹⁰ Fowler, 1994, p. 118

over time.¹¹ Advocates of farmers' rights have developed different approaches to address this situation and to reward farmers for their contributions to plant genetic diversity. In the first approach breeders are precluded from demanding payment from farmers who engage in certain farming practices, such as saving seeds and planting seeds saved from prior purchases, or informally exchanging seeds. A second approach seeks to modify existing IPR laws so as to permit farmers themselves to claim exclusive rights in the plant varieties they cultivate informally. A third approach involves recognizing farmers' rights not through IPRs but through benefit sharing mechanisms, such as financial payments and technology transfers, that compensate farmers for their contributions to plant genetic diversity. This last approach - which is recognized in article 9 of the ITPGR - questions whether farmers in fact have "rights" as that term is understood within an intellectual property paradigm, while acknowledging the need to reward their contributions to plant genetic diversity.¹²

- Traditional knowledge

An issue closely related to farmers' rights is the recognition and protection of the plant-related knowledge, innovations and practices of indigenous and local communities. Advocates assert that those claiming IPRs in plant genetic resources and plant varieties often utilize such knowledge without adequately acknowledging the contributions of the communities who possess it. Mechanisms to redress this problem are similar to those discussed above relating to farmers' rights, a linkage reflected in article 9 of the ITPGR. In the fall of 2000, the World Intellectual Property Organization (WIPO) established a new Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore to study these issues.

- "Bio piracy" and property rights in unimproved plant materials

Attempts to claim IPRs in unimproved plant genetic resources have often been labeled as a form of "biopiracy."¹³ Biopiracy is not a legal term of art, however and has been loosely used to refer to any act by which a commercial entity seeks to obtain IPRs over biological resources, including

¹¹ Dutfield, 2000, p. 50

¹² Blakeney, 2002, pp. 9-11)

¹³ Correa, 2000, p. 172

plant varieties that are seen as "belonging" to developing states or indigenous communities.¹⁴ Thus, even where an IPR claim relates to improvements to raw plant materials, certain governments and NGOs have labeled the entity seeking legal protection as a biopirate if it has not provided a fair return to those who granted access to the raw materials.

- Plant breeders' research interests.

Even as between groups of plant breeders, the scope of IPRs in plant varieties can be controversial. Tensions arise between first generation breeders who have secured legal protection for new varieties and second generation breeders who seek to utilize those new varieties to develop still more varieties. As with farmers' rights, it is possible to use the exceptions and limitations provisions of national IPR laws to permit second generation innovators to engage in such activities without the authorization of first generation breeders.

PART II

Plant Variety Protection at the International Level

I. The UPOV Convention

The International Convention for the protection of New Varieties of Plants (UPOV) is the only international treaty focusing on plant variety protection.¹⁵ The Convention was first adopted in Paris in 1961 and entered into force in 1968. It has been revised three times in, 1972, 1978 and 1991. It established the International Union for the Protection of New Varieties of Plants which has the mandate to enforce the Convention. Its main goal is to encourage 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 breeding¹⁶. To bring the TRIPs patent provisions into line with UPOV Convention on the protection of plant varieties, Article 27.3(b) permits Members to provide "for the protection of plant varieties either by patents or by an

¹⁴ CEAS Consultants, 2000, p. 70

¹⁵ P. CULLET, *Plant Variety Protection in Africa: Towards Compliance With The TRIPs Agreement*, 45 *Journal of African Law*, 2001, p. 100.

¹⁶ S.K. VERMA, *TRIPs and Plant Variety Protection in Developing Countries*, 6 *EIPR*, 1995, p.282.

effective *sui generis* system or by any combination thereof”.¹⁷ As most developing countries are yet to adopt some form of plant variety protection¹⁸, this is due to the fact that developing countries do acknowledge that, the UPOV Convention presents one model of a *sui generis* system of plant protection for plant breeders developing new plant varieties.¹⁹

The difference between the 1978 Act and 1991 Act is significant, particularly with respect to developing countries, as the existing divergence between the two Acts on related issues such as the conditions, scope and duration of protection²⁰, have triggered some concerns as developing countries in their effort to adopt a *sui generis* system tailored to meet their national needs are confronted with the issue of limited precedents or guides to choose from. In view of the circumstances, considering the limited options available, developing countries find themselves outweighing the choice of taking up the challenge of devising a plant variety protection, adapted to the needs and conditions which would ensure the fulfillment of basic food needs of the people and the sustainable management of their biological resources. The conditions for granting a breeder's right are set out in Article 6 of UPOV 1978 and Article 5 of UPOV Convention 1991. These are novelty²¹, distinctness²², uniformity²³ and stability²⁴. Both the 1978 and 1991 Act specify the minimum scope of protection that States must grant once the variety satisfies the criteria for protection. The rights granted exclusively enable the breeder to exploit his new variety. Article 14 of the 1991 Act adopts the concept of “essentially derived variety”, restricting the application of the “breeder's privilege”.²⁵ Extending the scope of protection to cover essentially derived varieties means that any act done by a breeder to improve an initial protected variety, should not be exploited commercially without the authorization of the owner of the initial variety. Under UPOV Convention 1978, the minimum period of protection is fifteen years,

¹⁷ M. BLAKENEY, *supra* note 1, p.83.

¹⁸ CULLET, *supra* note 15, at 99

¹⁹ VERMA, *supra* note 16, at 283

²⁰ T. KONGOLO, *New Options for African Countries regarding Protection for New Varieties of Plants*, 4 *JWIP*, 2001 p.351.

²¹ 1991 Act, Article 6(1): “The variety shall be deemed to be new if, at the date of filing of the application for a breeder's right, propagating or harvested material of the variety has not been sold or otherwise disposed of to others, by or with the consent of the breeder, for purpose of exploitation of the variety”.

²² 1991 Act, Article 7: The variety shall be deemed to be distinct if it is clearly distinguishable from any other variety whose existence is a matter of common knowledge at the time of the filing of the application.

²³ 1991 Act, Article 8: “The variety shall be deemed to be uniform if, subject to the variation that may be expected from the particular features of its propagation, it is sufficiently uniform in its relevant characteristics.”

²⁴ 1991 Act, Article 9: “The variety shall be deemed to be stable if its relevant characteristics remain unchanged after repeated propagation or, in the case of a particular cycle of propagation, at the end of each such cycle.”

²⁵ UPOV ACT, Article 14 (5)

computed from the date of issue of the title of protection, and less than eighteen years for vines, forest trees, fruit trees and ornamental trees.²⁶ The duration of protection of breeders right under the 1991 Act for plant varieties was extended to not less than twenty years from the date of the grant of the breeder's right, and for trees and vines the duration should not be less than twenty-five years.²⁷

II. The TRIPs Agreement.

The TRIPs Agreement established minimum standards for protection and enforcement of intellectual property rights as laid out in Article 7, which indicated the TRIPs Agreement objectives. Article 27(3)(b) of the TRIPs Agreement allows WTO members 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."²⁸ 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, which leaves the choice of the protection system entirely to the members, reflects the differences between the existing legal systems, ranging from the highest level of protection in United States where plant varieties may be protected by patents or by specific plant variety protection rights or even by special plant patents, to the EU countries where plant variety protection is confined to specific variety protection systems only.²⁹ 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.

Although the UPOV Acts have provided IPR protection for plant varieties for more than forty years, their significance has recently been overshadowed by a different intellectual property

²⁶ UPOV AVT, Article

²⁷ UPOV ACT, Article 19

²⁸ 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."

See: J.H. REICHMAN, *Universal Minimum Standards of Intellectual Property Protection under the TRIPS Component of the WTO Agreement*, 29 *The International Lawyer*, 1995, p.358

²⁹ 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 *Duke J. Comp. & Int'l L.*, p.100 .

treaty, the Agreement on Trade-Related Aspects of Intellectual Property Rights ("TRIPs" or the "TRIPs Agreement"). Adopted in 1994 as a treaty administered by the WTO, TRIPs is the first and only IPR treaty that seeks to establish universal, minimum standards of protection across the major fields of intellectual property, including patents, copyrights, trademarks, industrial designs, integrated circuits and trade secrets. Although the TRIPs Agreement devotes only minimal attention to plant breeders' rights or plant variety protection and does not even mention the UPOV Acts, its adoption has done more to encourage the legal protection of plant varieties than any other international agreement.

III. TRIPs-Plus

Many western corporations feel that the TRIPs rules are inadequate; therefore, they seek more extensive protection. In order to achieve much stronger standards of protection, developed countries have practiced an aggressive course to close any existing loopholes, to prosecute non-compliance, and to promote TRIPs-plus intellectual property standard, outside the WTO in bilateral, regional and multilateral agreements,³⁰ with governments of the southern countries.

Whenever developing countries which are WTO members enter into an international agreement whether bilateral or other which grants TRIPs plus favors to another nation, it follows that the Most-Favoured-Nation Treatment (MFN) principle will oblige those developing countries to extend those favors to all WTO members according to article 4 of the TRIPs Agreement. This means that the MFN principle in TRIPs when combined with bilateral agreements will work in favor of the two leading exporters of intellectual property in the world, the US and the EU, and will have the effect of spreading and setting new minimum standards of intellectual property faster than would have happened otherwise. Recognizing the danger of bilateralism of intellectual property Drahos suggest that: "...developing countries develop a veto coalition against further ratcheting up of IP standard, and that the TRIPs Council shift its purpose from a body which secures a platform for IP regulation to one that polices a ceiling"³¹

CBD and TRIPs Legal Conflicts

³⁰ S. K.SELL, *Proceeding of the 2002 Conference Access to Medicine in Developing World* 20 Wis-int'l L.J. summer 2002, p.481

³¹ Peter Drahos and John Braithwaite, *Information Feudalism*, 2002, chapter 12.

The relation between TRIPs and CBD has become a major focus of discussion in international policy circle.³² Some argue that they are incompatible, while others³³ that there is no conflict. The principle of national sovereignty over genetic resources in the CBD, for example, might on the face of it seem to be in tension with the principle in TRIPs that intellectual property rights are private property.³⁴ Under the CBD access to genetic resources is subject to the prior informed consent and mutually agreed terms, so the CBD gives developing countries legal authority to diminish the incidence of biopiracy by requiring prior informed consent, whereas TRIPs does not mention this authority with the risk to promote the phenomenon of bio piracy.³⁵ The debate is reflected in the WTO Doha Ministerial Declaration under which the Council for TRIPs was instructed to examine, *inter alia*, the relationship between the TRIPs Agreement and the Convention on Biological Diversity.³⁶ The debate concerning such relationship is still going o

PART III

The international legal system regulating IPRs in plant varieties and plant genetic resources may be on the cusp of significant change. The sources of this change are twofold. First, in November 2001 the WTO membership agreed to a new round of multi-year trade negotiations which will include a review of the plant-related IPR obligations in the TRIPs Agreement. Second, in the same month, the FAO Conference adopted a new International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGR). ‘Doha Round of trade negotiations’ entered into force in June 2004 is now under way at the World Trade Organization as well as the International Treaty on Plant Genetic Resources for Food and Agriculture. The ITPGR, by

³² *The Relationship Between the Agreement on TRIPs and Biodiversity Related Issues*, Final Report for DG Trade European Commission Submitted by CEAS Consultants (Wye)Ltd Centre for European Agricultural Studies in association with Geoff Tansey and Queen Mary Intellectual Property Research Institute, September 2002, p.53. available at: <http://europa.eu.int/comm/trade/miti/intell/ceas.htm>

³³ This is the industrialized countries approach, especially US and EU. The European Communities and their Member States believe that, from a legal perspective, the CBD and the TRIPs Agreement do not conflict with each other. They have different objectives, they do not deal with the same subject matter and they are of a different legal nature.

³⁴ *The Relationship Between the Agreement on TRIPs and Biodiversity Related Issues*, p.54

³⁵ J. STAFFLER, Overview on Article 27.3(b), Lecture, LL.M in Intellectual Property, Turin University/ WIPO, 11 June 2003.

³⁶ WTO Ministerial Conference, Doha, 9-14 November 2001.WT/ MIN (01) /DEC/1.no.19

contrast, seeks to establish a system of access to plant genetic resources and to further many of the other societal objectives. In doing so, however, it attempts to limit the types of plant genetic materials that may be protected as intellectual property.

THE WTO DOHA ROUND OF TRADE NEGOTIATIONS

On 14 November 2001, trade ministers from the WTO's then 142 Members meeting in Doha, Qatar agreed upon the text of several official declarations to serve as the framework for a new round of trade negotiations. These declarations do not expressly address the issue of plant variety protection. They do, however, suggest that the WTO will conduct an expansive review of the relationship between IPRs in plants and competing policy objectives as it considers whether and in what ways to revise the current text of the TRIPs Agreement. The Doha Round of trade negotiations has opened a window of opportunity for states seeking to balance the protection of plant breeders' rights against other societal objectives.³⁷ To take just one example, Members might require every applicant seeking a patent or protection of a new plant variety to disclose the origin of plant genetic material upon which the invention or variety was based, or to demonstrate that the material was acquired with the prior informed consent of the country or community of origin. These or other options could be adopted on either a mandatory or a permissive basis. Under a mandatory approach, TRIPs would be amended to require all WTO Members to change their IPR laws to include such policy-balancing provisions. Under a permissive approach, TRIPs would be amended to clarify that individual Members may implement such provisions without violating the treaty. The mandatory option would create a harmonized international solution, but one that would be extremely difficult to negotiate. In the case of disclosure or prior informed consent requirements, for example, it would have the effect of obliging one WTO Member (the state in which IPR protection was sought) to protect rights of another WTO Member (the country of origin of genetic material) that have no relation to the protection of intellectual property rights or intellectual property products. In an effort to avoid the potential conflicts, there is likely to be significant interaction between the government officials negotiating in the WTO's, TRIPs Council and those working with the ITPGR's Governing Body. However, because any agreement reached during the Doha Round of trade negotiations will incorporate numerous

³⁷ See GRAIN, 2003, which discusses whether the review of TRIPs is "at a turning point".

issues unrelated to plant genetic resources, it is difficult to predict the final form that such an agreement will take.

Domestic Legal Framework

➤ The Protection of Plant Varieties and Farmers' Rights Act, 2001

The main legislative instrument is the Protection of Plant Varieties and Farmers' Rights Act, 2001 which constitutes the government's response to its obligation under Article 27.3 (b) of the TRIPs Agreement. The Act focuses on the establishment of plant breeder's rights and farmers' rights. The regime for plant breeder's 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 second main aim of the Act is the introduction of farmer's rights. At this level, substantial changes were proposed by the Joint Parliamentary Committee to which the bill was referred after its introduction in Parliament³⁸. While the original version of the bill contained only a short provision on farmers' rights, the Committee decided to add a whole new chapter on farmer's rights. Thus the Act provides, for instance, that farmers can, like commercial breeders apply to have a variety registered and should receive the same kind of protection for the varieties they develop.

The Act also provides two ways for benefit sharing. The first scheme allows individuals or organization to submit claims concerning the contribution they have made to the development of a protected variety. The second benefit-sharing avenue allows an individual or organization to file a claim on behalf of a village or local community.

➤ The Biodiversity Act, 2002

This Act 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 resources³⁹. 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

³⁸ See Joint Committee on the Protection of Plant Varieties and Farmer's Rights Bill, 1999, Report of the Joint Committee (August 2000)

³⁹ The only substantive chapter of the Biological Diversity Act 2002 – Chapter II – is entitled Regulation of Access to Biological Diversity.

resources or related knowledge for all foreigners. 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 boards⁴⁰. The Act is even more stringent in terms of IPR since it requires that all inventors obtain the consent of the National Biodiversity Authority before applying for such rights⁴¹.

➤ **The Patent Act, 1970**

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 rejected for instance, the patentability of all methods of agriculture and was generally much more restrictive than similar laws in western countries. The TRIPs has imposed significant alterations to this Act. The Patents (Amendment) Act 2002 has generally modified the Act to allow compliance with TRIPs⁴².

CONCLUSION

There are many proposals to extend the application of current modalities of intellectual property rights or to adapt it in order to protect certain aspects of farmers' rights including farmers' varieties. It is worth stressing that the concept of farmers' rights emerged in order to offer counterbalance to the intellectual property system, and to ensure that barriers were not created against the farmers' use and development of plant genetic resources. Hence farmers' rights may not be in themselves, strictly speaking, an intellectual property rights mechanism. However, considering that the concept of farmers' rights have been recognized through the PGFRA treaty and it covers unique subject matter which involves the food needs of people in developing countries, it is thus imperative that a system is created, which is specifically tailored to reward farmers for their immense contribution towards food security for all. Several developing countries such as India has adopted a *sui generis* system to protect plant varieties and recognize at the same time farmers' rights and protect relevant traditional knowledge.

⁴⁰ Sec 7 of the Biological Diversity Act, 2002

⁴¹ Sec 6 of the Biological Diversity Act, 2002

⁴² See Patents (Amendment) Act 2002