

Impact of IPR Plant Variety and Plant Breeders Rights

Dr. R. Valarmathi

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CMR UNIVERSITY

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LIST OF ABBREVIATIONS

1. ABA –American Breeders Association
2. AIPPI – The International Association for the protection of Intellectual Property
3. ASSINSEL – Association Internationale Des Selectioneurs Pour La Protection Des Vegetables
4. ASTA – American Seed Trade Association
5. CBD – Convention on Biological Diversity
6. CGIAR – The Consultative Group of International Agricultural Analysis
7. COP – Conference of the Parties
8. EC – European Committees
9. EU – European Union
10. FAO – The Food and Agriculture Organization of the United Nations
11. FRPA – Farmers Rights Protection Authority
12. GATT – The General Agreement on Tariffs and Trade
13. IARI – Indian Agriculture Research Institute
14. ICAR – Indian Council of Agriculture Research
15. ICC – International Chamber of Commerce
16. IGC – Intergovernmental Committee
17. IP - Intellectual Property
18. IPGRI – International Plant Genetic Resource Institute
19. IPS - Intellectual Property Rights
20. ITCPGR – International Technical Conference on Plant Genetic Resource
21. ITPGR – The International Treaty on Plant Genetic Resource for Food and Agriculture
22. LGUS – Land-Grant Universities
23. MFN – Most Favoured Nations
24. MNCs – Multinational Corporation

25. NCCPB – National Council of Commercial Plant Breeders
26. NGO – Non-Governmental Organization
27. PBR – Plant Breeders Rights
28. PCT – Patent Cooperation Treaty
29. PGR – Plant Growth Regulator
30. PPV & FR's Act – Plant Variety Protection and Farmers Rights Act
31. PUPA – Plant Variety Protection Act
32. PVP – Plant Variety Protection
33. R&D – Research & Development
34. SAU – State Agricultural Universities
35. TK – Traditional Knowledge
36. TRIPS – Trade Related Aspect & Intellectual Property Rights
37. UK – United Kingdom
38. UPOV – International Union for the Protection of New Varieties of
Plant
39. US – United States
40. USA – United States of America
41. USDA – The United States Department of Agriculture
42. USDA – US Department of Agriculture
43. WHO – World Health Organization
44. WIPO – World Intellectual Property Organization
45. WTO – World Trade Organization

CHAPTER-1

INTRODUCTION

The level of intellectual property protection that each country allows is directly related to its level of development. The more technologically economically developed a country is, the higher is the level of intellectual property protection. This has never been truer than with regard to plant variety protection. Considering that the selective breeding of plant strains is an ancient act, it is surprising that plant breeding has taken so long to obtain legal protection.

The probable reasons for this late development are (i) the relatively recent advent of sophisticated technology for the breeding and testing of new plant strains, (ii) recognition of seeds and plant cultures as a commercial market of their own, and not merely as a supplementary market which served the primary markets for crops, and (iii) a certain degree of inhibition against the granting of even temporary proprietary rights in the products of a form of intellectual activity which so closely resembled the role of an omnipotent deity in the creation of the world "¹

However, later when the necessity for granting intellectual property protection for plant variety arose, the patent system was found to be unsuitable to provide secure protection for the product of the plant breeders' research. Difficulties of description, lack of reproducibility and exhaustion of rights were among the problems which inhibited the patent system from adjusting its criteria to meet the needs of plant breeder.²

¹ Phillips Jeremy. & Firth Alison, Introduction to Intellectual Property Law, Butterworths & Co. (Publishers) Ltd, London, 2001, p.334

² Greengrass Barry, UPOV and Protection of Plant Breeders- Past Developments Future Perspective, IIC, Vol.20, No 5, 1989, p.622

It was the United States of America that was the first country to grant protection to plant varieties in a sense that was an amendment of the basic patent laws for application to seeds which are asexually reproduced through cuttings and bulbs. This was done through the enactment of the 1930 Plant Patent Act. Again following a long genesis the Plant Variety Protection Act was passed with little public attention the day before Christmas, 1970 by the U.S. Congress. It is surprising, with hindsight, that the patent system (with the exception of the United States of America and its plant patent) did not grasp the issue of the vulnerability of the developer of a new variety. This especially important, considering that farming was a commercial activity in many European countries. The last opportunity for the patent system to provide protection to the developer of a new plant variety was at the Lisbon Diplomatic Conference to revise the Paris Convention for the Protection of Industrial Property in 1958. No action was taken, the general view being that a special law was called for because of essential difference in the plant protection mechanism. The scene was set for the emergence of the UPOV (union pour la protection des obtentions) Convention which was signed in 1961 and dealt specifically with the field of plant variety protection. UPOV was subsequently amended in 1978 to provide that the right of the breeder provided for in the Convention could be recognised by the grant, either of a special title of protection or of a patent. It was further amended in 1991 to provide for stricter plant breeders' rights.

With the establishment of the WTO and the signing of the TRIPS Agreement by most of the countries of the world, it now becomes necessary for them to provide some kind of intellectual plant varieties. Art.27 (3)(b) of the TRIPS Agreement states that "Members shall provide for the protection of plant varieties either by patents or by an effective sui generis system or by any combination thereof."

India by virtue of being a member of the WTO also has to comply with requirements of this provision. This study thus concentrates on the kind of intellectual in India keeping in mind the socio-economic and agricultural concerns.

1.1 IMPORTANCE OF THE STUDY

In India "The Patents Act, 1970" prohibits the patenting of a new plant variety.³The principle behind this exclusion is attributed to a fragile balance that belongings strives to take care of, giving due importance to the requirement of guaranteeing public access to a typical data pool. After all, the agricultural sector was indispensable for meeting food necessities associated allowing exclusive rights for individual appropriation was an unreasonable proposition. This, however, began to vary late into the twentieth century with the comparatively decreasing economical interest within the agriculture sector in developed countries, paving the trail for growth of the non-public sector. The dynamical circumstances required legislation to guard the interests of the non-public sector. The law required to stay pace with this transition to confirm that adequate incentive, within the style of legal protection of plant varieties, may be provided to market innovation.

IPR, within the style of Patents and Plant Breeders' Rights, were evolved to guard agricultural inventions. Plant Breeders' rights were significantly designed to protect new varieties of plants, thus enabling the plant breeders to protect their interests and allowing a monopoly on commercial exploitation of their invention for an ascertained time-period. Still, developing countries, like India, with their weak IPR management exhibit some considerations for these interests – as an example India still doesn't acknowledge patents on life forms or plant breeders' rights. However a modification has been place in motion with the implementation of Article 27 of the TRIPS agreement that demands that developing countries adequately shield the rights of plant breeders either through Patents or Plant Breeders' Rights. It permits the developing countries to adopt a single system to suit their desires.

³ 'Sec 3 The following are not inventions within the meaning of this Act: (1) any process for the medicinal, surgical, curative, prophylactic or other treatment of human beings or any process for a similar animals or plants to render them free of disease or to increase their economic value or that of their products.

Domestically, the Indian legislation that takes up the difficulty of Plant Breeders' Rights is that the Protection of Plant Varieties and Farmers' Rights Act, that was gone the parliament in 2001 once a decade long method of drafting and re-drafting because of the criticisms of people's organizations, particularly those representing the farmers, because the bill had didn't articulate farmers' rights as possession rights.

Innovations within the field of seeds and plant breeding, whether or not in formal or informal systems, have primarily been radio-controlled by the larger human smart. IPRs, on the opposite hand, favour monopolies with that return the risks of wiping out farmers' rights to save lots of and exchange seeds and restricted breeders' rights to access protected varieties for any breeding. it's believed that the social control of a strict IPR regime, in say Bharat, would solely create the condition of the already pitiable farmers worse by intrusive with the centuries recent method of 'innovation for common profit

1.2 AIMS AND OBJECTIVES

This research work is done on the topic of "*Impact of IPR on Plant Breeders*"

The objectives are enlisted below:

- 1) To promote effective and adequate protection of IPR
- 2) To ensure IPR themselves do not become barriers to legitimate trade
- 3) For developing an effective support system in order to encourage the plant breeders and farmers, and protect new plant varieties.
- 4) To protect the right of the farmers for their contribution in conserving, improving and making available plant genetic resources for the development of a plant variety.
- 5) To stimulate investment for research and development by plant breeders, both in public and private sector, for the accelerated development of agriculture in the country.
- 6) To catalyze the seed industry growth in our country for obtaining high quality seeds and planting material for the farmers.

1.3 RESEARCH ISSUES

1. Whether there is any history on plant variety protection?
2. Whether there is any classification of farmers in India?
3. Whether the protection given to farmers in India satisfactory?
4. Whether the breeders can be extended with same protection as that of farmers' right?
5. Whether there is any drawback in the present legislation relating to PV & FR's Act?
6. Whether present legislation requires any changes to be incorporated in the legislation?

1.4 HYPOTHESIS

The existing sui generis legislation does not adequately take into account the socio-economic and cultural factors of Indian Agriculture. India needs to frame their own sui generis legislation for the protection of plant varieties keeping in mind the various agricultural practices adopted by the Indian farmer over the years.

1.5 RESEARCH METHODOLOGY

The researcher in this work has relied mainly on 'Doctrinal and Analytical Research'. The above method was considered apt for the given topic; because, it is a theory-based topic, for which the doctrinal method of research is preferred as compared to non-doctrinal or empirical method of research.

1.6 SCOPE AND LIMITATION

The study is purely based on the secondary data therefore it doesn't reflect the overall aspects of the board characteristics.

1.7 SOURCES OF DATA

Primary source of data is also been adopted in this research by a researcher.

Secondary source of data have been used. The secondary data source like books, internet, article etc. The detailed description about the sources can be found in the bibliography.

1.8 MODE OF CITATION

An uniform mode of citation has been followed by using Harvard Blue Book, Nineteen Edition.

1.9 LITERATURE REVIEW

1. R. KalpanaSastry, Mechanisms for Protection of Agricultural Innovations in India Vol. 27, No. 6, pp. 3-11 ,2007.

The paper discusses various conventions/treaties/agreements affecting agriculture innovation systems, and the legal mechanisms existing in India for such innovations. It raises concerns on how the policy environment and governance is affecting the agriculture at large and agri-based products in particular. It also discusses the role of various agencies including public, private and NGOs in India in protecting vast biodiversity and the measures they need to take to meet the challenges related to issue of IP protection related to agriculture in the country.

2. Vani Aggarwal and Aditya Satpute, Role of Trips in Indian Agriculture Sector: Balancing Traditional Knowledge and Biotechnology, Selected Paper prepared for presentation at the 2013 National Conference on Economic Reforms, Growth and Social Welfare, Kerala, India, December 16-18, 2013,

The paper looks into the comparative advantage of Indian agriculture keeping in mind the increasing opportunities in International market for organic products. The study assesses the role of TRIPS agreement by analyzing provisions relating to agriculture and its regulation in India. In the later part of the paper analyses the scope of biotechnology and TK in the context of TRIPS agreement. The last section of the study provides a way forward.

3. JayashreeWatal, Intellectual Property Rights in Indian Agriculture, Working paper No. 44, Indian Council For Research on International Economic Relations, July,1998,

This paper by JayashreeWatal sets the public debate on IPRs in Indian agriculture in the framework of India's international commitments on TRIPS and at the same time provides an overview of the state of play on implementing IPR legislation in agriculture in India. It also makes some specific suggestions on how to resolve some of these important issues.

4. SudhirKochhar, Analysis of Opportunities and Challenges in IPR and Agriculture in the Indian Context, Journal of Intellectual Property Rights 16(2):69-73, March 2011,

This paper assimilates and contributes to the current state of IPR knowledge and proprietary products in the Indian jurisdiction. The influence of international IPR domain and influx of proprietary foreign technology products on Indian agricultural technology profile vis-à-vis the plight of the national players is discussed, particularly, with respect to patenting in plant biotechnology/transgenics.

5. Vikas Kumar and Kunal Sinha, Status and Challenges of Intellectual Property in Agriculture Innovation in India, Journal of Intellectual property Rights, Vol 20, September 2015, pp 288-296.

The study is an attempt to analyse the overview and impact of intellectual property rights (IPRs) on agricultural innovation in India. This paper examines the patenting activity to identify current innovations in crop farming in India. In the case of granted patents, majority of the patents belong to the area of plant growth. It explores the specificities of patent portfolios and its scope of future innovations in the agriculture engineering sector. But there are still

unanswered questions. This paper attempts to answer some of these questions by tracing the effects of IPRs on Private investment in crop genetic improvement and in turn, on agriculture productivity. However, the research looks at the prospect of India as a developing country to boost its current intellectual property (IP) framework and legislation in order to develop its agricultural technology. Hence, it focuses on whether there is a single system as a model of an IP regime to enhance agriculture production in India.

6. **Thippeswamy, S., PLANT VARIETY PROTECTION: AN HISTORICAL PERSPECTIVE, Received 10th August 2017 Received in revised form 27th September, 2017 Accepted 14th October, 2017 Published online 29th November, 2017.**

Plant selection Protection may be a type of property Right granted to the stock breeder of latest plant selection in relevance sure acts regarding the exploitation of the protected selection that require previous authorization of the stock breeder. Plant breeders developing new plant varieties area unit ready to apply for various varieties of property Rights (IPR). However, this can be the results of complex historical method that solely resulted within the thought of plants as appropriate for intellectual property protection at a worldwide scale. This paper examine summary of the evolution of Intellectual property (IP) protection for plant varieties area unit a extremely topical and powerfully debated issues, in its proposal and implementation, relating the institutional history.

7. **Phillips Jeremy. & Firth Alison, Introduction to Intellectual Property Law, Butterworths& Co. (Publishers) Ltd, London, 2001.**

Introduction to Intellectual Property Law includes coverage of the extensive amendments to the Copyright, Design and Patents Act 1988. Also covered are the European Patent Convention, the Patent Co-operation Treaty, the Madrid Agreement, the Agreement on Trade-Related aspects of Intellectual Property Rights, the WIPO Copyright Treaty and the Performances and Phonograms Treaty.

1.10 CHAPTERISATION

1. Introduction

In this chapter researcher tries to introduce the concept of intellectual property law in relation to the rights of plant breeders which includes the protection of plant varieties and also about the TRIPS Agreement. It also includes the research issues, hypothesis, method of research along with the mode of citation.

2. Historical Background

In this second chapter researcher enhanced the concept of the historical background. The implementation of national and international laws or the conventions like the adaptation of UPOV, GATT, WTO, Plant Variety Protection and many more will be studying.

3. Plant Breeders' Rights

This chapter will be dealing with the plant breeders' right. What, why and how the laws or the conventions is been implemented to them. The researcher will also study the positive and negative impact of such laws.

4. The realisation of Farmers Right.

Here the researcher studied the rights of the farmers. It talks about how laws and legislations is been implemented to them with proper historical back analysis.

5. The critical review of available bills

In this chapter researcher critically reviewed the bills available on the rights of plant breeders and farmers rights.

6. Conclusion

In this conclusion chapter researcher analysed and examined about all the chapters and concluded with the hypothesis.

CHAPTER-2

HISTORICAL BACKGROUND OF DEVELOPMENT OF PLANT VARIETIES AND ITS PROTECTION IN INTERNATIONAL AND NATIONAL REGION.

Plant varieties were developed over centuries through the exchange of seeds and also the sharing of data among farmers. Even nowadays this is often the model of innovation and diffusion in agriculture that prevails in most developing countries. It is based on principles of common possession, within a given community, and free access to materials and knowledge. However, with the event of business plant varieties by seed corporations, a replacement model of production and diffusion, based on Belongings rights, has emerged. As a result of the obligations imposed by the Agreement on Trade-Related Aspects of Belongings Rights (TRIPS), World Trade Organization (WTO) member countries have currently become certain to give for a few kind of Intellectual property Protection on Plant varieties. The evolution of Plant Breeders Rights includes a long and often polemic history. A minimum of 2 essential queries lay behind the introduction of PBRs as a kind of Intellectual property rights (IPRs). The primary involved the explanation for introducing IPRs to hide enhancements in plant varieties and the second, the shape of protection to be adopted. Here, the key consideration was whether or not or not a patent-like protection was to be extended to new plant varieties.

The introduction of IPR in agriculture has vital link with other sorts of property rights directly in relevant in agriculture. In reality the question of access to biological and genetic resources for food and agriculture has been at the centre of serious debates at the international level for a number of years. Management by individual farmers, private companies and states over the genetic and biological resources they hold and connected information has become progressively contentious with the progressive introduction of IPR over certain kinds of plant varieties for example. Whereas the sharing of resources and information was stressed till 1980s the new system that promotes individual appropriation has led to the formulation of latest set of rules regarding management over knowledge and resources.

The first legislative proposal for the protection of agricultural innovations was the Prussian Patent Law of 3 September 1833 concerning the declaration of possession of recent inventions and discoveries in the fields of the technological arts and agriculture. This general measure was never enforced. The inclusion of agriculture during this instrument couldn't be attributed to the incentivization of innovations in plant breeding, as it anticipated, by 3 decades, the 1865 publication of the experiments of Mendel on the principles of heredity and, by virtually seventy years, the uncovering of his works by Corren, Von Teschermark and de Vries in 1900. The significance of the publication of Mendel's theories is that made possible the institution of a plant breeding business. A significant food security aspect of this business is that agricultural innovation shifted faraway from farmers to corporations.

The primary company objective of seed corporations, to secure repeat purchases of seed, was in direct contradiction to the practice of farmers to avoid wasting seed for future plantings. The subsequent history of the seed breeding business has been characterized by the event of legal and technological means to preserve innovations and to secure repeat purchases of seed.

2.1 INTELLECTUAL PROPERTY AND AGRICULTURE

The first International intellectual property Convention was the 1883 Paris Convention for the Protection of business Property. during this instrument agriculture was envisaged as associate area of enterprise in respect of that property rights can be secured, thus Article one (3) of the Convention had declared that:

Industrial Property shall be understood in the broadest sense and shall apply not only to industry and commerce proper, but likewise to agricultural and extractive industries and to all manufactured or natural products, for example, wines, grain, tobacco leaf, fruit, cattle, minerals, mineral waters, beer, flower and flour (Paris Convention for the Protection of Industrial Property, 1967).

Given the state of technology in 1883, the inclusion of those agricultural subjects among the Paris Convention, was probably within the context of the protection of trademarks and indications of supply. The importance of the latter was reflected in the Second Conference of Revision of the Paris Convention, held at Madrid in 1890-91, that proposed a special agreement for the repression of false indications of origin. the likelihood of as well as the topic of plant varieties protection among the Paris Convention was addressed, for the primary time, in 1955 by a gathering of consultants that had been convened to organize the agenda for the national capital Revision Conference of the Paris Union, regular for 1958.

The committee of specialists terminated that it absolutely was premature to include the topic among the Paris Convention and tries to raise the matter within the resultant Lisbon Conference by the International Association for the Protection of industrial Property (AIPPI), the International Chamber of Commerce (ICC) and the United Nations Food and Agriculture Organization (FAO), were unsuccessful.

The first inclusion of agriculture innovations in an intellectual property statute was the us Plant Patents Act of one hundred thirty, which had been foreshadowed by the introduction within the us congress in 1906 of a “Bill to a mend the laws of patents within the interest of the originators of husbandry products”. This Bill was unsuccessful, as were similar Bills introduced in

1907, 1908 and 1910. The Plant Patent Act, created a sui-generis system of protection for agricultural innovations, confining protection to asexually reproduced plants, as a result of the fear that sexually reproduced varieties lacked stability. The section conjointly excluded tuber propagated plants primarily as a result of concern that this is able to cause monopolies in basic foodstuffs such as potatoes. Applicants for Plant Patents were needed to asexually reproduce the plant in relation to that protection was sought to demonstrate the stability of the characteristics of the plant that were claimed. Section 161 needed that new varieties be “distinct”. The statute didn't outline this demand, though the Senate Committee report related to the Act, state that “in order for a replacement selection to be distinct it should have characteristics clearly distinguishable from those of existing varieties” and Plant selection protection: an historical perspective that it had been not necessary for the new selection to represent “a variety of a replacement species. Legislations like the United States Plant Patent Act was adopted in 1937, South Africa in 1952 and therefore the Republic of Korea in 1973, in an Endeavour by those countries to align their patents system thereupon of the USA.

2.2 THE PHILOSOPHY OF INTELLECTUAL PROPERTY PROTECTION

As society moved towards more complicated technologies, the huge scales of activity required by most research, involving time, money, and expertise, have made the autonomous inventor a rarity. This trend strengthens the image of idea-making as labour akin to the mechanical labour that operates assembly lines.⁴ Locke views labour as something unpleasant enough so that people do it only in expectation of benefits.⁵ He proposed that the unpleasantness of labour was to be rewarded with property because people must be motivated to perform labour.

Another interpretation of Locke’s labour justification is what can be called the "labour-desert" or "value-added theory. The "labour-desert" theory asserts that

⁴ Hughes Justin, “THE Philosophy of Intellectual Property”, The Georgetown Law Journal, Vol. 77:287,1988, p.301.

⁵ *Ibid*,p.302.

labour often creates social value, and it is this production of social value that "deserves" reward not the labour that produced it.

Thus using Locke's theory it can be explained that intellectual property rights are granted as a reward and as a motivation to perform labour. It is also granted because of the value addition done as labour according to one of the interpretations of Lockian theory creates social value.

For Hegel, the individual's will is the core of the individual's existence, constantly seeking actuality and effectiveness in the world.⁶Hegel perceives a hierarchy of elements in an individual's mental make-up in which the will occupies the highest position. According to Hegel, the will interacts with the external world at different levels of activity. Mental processes-such as recognizing, classifying, explaining and remembering - can be viewed as appropriations of the external world by the mind. Cognition and resulting knowledge, however, are the world imposing itself upon the mind. The will is not bound by these impressions. It seeks to appropriate the external world by imposing itself upon it. This is the true purpose of property and, perhaps to emphasize that purpose, Hegel explicitly disavows any need for the institution of property to satisfy physical wants.⁷

Property becomes expression of the will, a part of personality, and it creates the conditions for further free action. For Hegel, intellectual property need not be justified by analogy to physical property. In fact, the analogy to physical property may distort the status Hegel ascribes to personality and mental traits in relation to the will. Intellectual property provides a way out of this problem, by "materializing" these personal traits.⁸

Plant variety protection being a part of intellectual property protection, can be justified according to the theories mentioned above.

A universal definition of intellectual property might begin by identifying it as non property which stems from is identified as, and whose value is based upon

⁶ Hughes Justin, "THE Philosophy of Intellectual Property", The Georgetown Law Journal, Vol. 77:287,1988, p.333.

⁷*Ibid.*, p.337

⁸*Supra* n 7.,p.337.

some idea or ideas. Furthermore, there must be some additional element of novelty. Indeed, the object, or res, of intellectual property not be known (commercially known in case of plant variety protection) to anyone else. What is important is that at the time of propertization the idea is thought to be generally unknown. The res cannot be common currency in the intellectual life of the society at the time of propertization.

Intellectual property (plant variety protection) - like all property – remains an amorphous bundle of rights. These rights invariably focus on physical manifestations of the res. Plant variety protection is justified (partly) using Locke's approach by saying that first the production of ideas requires a person's labour; second, that these ideas are appropriated from a "common which is not significantly devalued by idea's removal; and third, that ideas can be made property without breaching the non-waste condition. Thus granting of rights' (plant variety protection rights) is justified according to Locke. The "Labour-desert" theory asserts that labour often social value and is this production of social value that "deserves" reward, not the labour that produced it. A new plant variety has social value (in most cases) and hence deserves protection.

The Hegelian personality theory applies more easily because intellectual products, even the most technical, seem to result from the individual's mental processes. As for Hegel's interests in using property rights to secure recognition for the individual, intellectual property rights (plant protection rights) are a means to this end because the rest is not merely seized by the individual, but rather it is a product of the individual.

2.3 HISTORY OF PLANT VARIETY PROTECTION

2.3.1 United States of America

It is said that an army travels on its stomach. Ultimately we all travel and live or die - on our stomachs, and this is, of course, no less true of the first European settlers in what was to become the United States than it is of us

today.⁹ The early European settlers brought with them seed of the English crops they were accustomed to grow. But the result was that the winter of 1609-1610 was the "starving time" in which two-thirds of the colony died. The Jamestown settlers then turned to the native Indian crops for survival

They possessed varieties adapted to the warmer or colder parts of the country.

Though the Indians themselves were to be driven to near-extinction, the squash, bean and maize varieties they had developed sustained the colonists while European and other exotic crops made the slow adjustment to new ecological niches. Each wave of new settlers brought with it a new set of crops and cultivars. Necessity made American farmers continually experiment with their crops. Though unaware that they were "breeding", farmers were engaged in building an adapted base of germplasm for American agriculture.

The Lords Proprietors of South Carolina, with the establishment of an experimental farm gave this informal experimentation its first institutional expression in 1699. Its purpose was to test the adaptability of mulberry trees, indigo, tobacco, hemp, flax and cotton to local conditions.¹⁰ These sponserers were thus obviously interested in cash rather than subsistence crops. In an effort to encourage the production of silk in the American colonies mulberry was introduced in Virginia in 1621.¹¹ Rice was brought to South Carolina in 1688 and sugarcane to Louisiana by 1718.¹² However it was only at the turn of the century that rice cultivation became profitable. This was when a variety from Madagascar proved suitable to the South Carolina environment.

The interest of the propertied elites in plant introduction carried through into the period of independence. George Washington like many other large landowners, imported large quantities of seed from Britain and other European countries. In 1818 Elkanah Watson, merchant, banker, farmer and founder of the Berkshire Agriculture Society used his substantial means to systematically request seeds from American consuls all over the world.

⁹ Kloppenburg Jr Jack Ralph, *First the Seed*, Cambridge University Press, Cambridge, 1990, p.51

¹⁰*ibid*,p.32

¹¹*ibid*,p.52

¹²*Supra* n 5, p.52.

The United States in 1819 was an agricultural society. Yet the vagaries of natural history had not provided it with a foundation of plant genetic resources that would permit expansive growth of population and commerce.

There was a clear and crucial social need for the introduction and adaptation of exotic crop species and varieties. The unique characteristics of the material in question (it is the seed), the magnitude of the undertaking, and the inability of individuals to recoup investment in plant exploration militated against systematic private efforts in this field. This led to the first significant intervention by the American federal state to provide the conditions for accumulation and growth. The Secretary of the Treasury William L. Crawford made a request to the nation's foreign consuls and naval officers in 1819 for the acquisition and collection of germplasm.

A second Treasury circular in 1827 encouraged more attention to collection work and provided detailed instructions for the preservation and shipping of seed.¹³ Between 1836 and 1849 Henry Ellsworth, the Commissioner of Patents successfully encouraged acquisition of new germplasm. In 1839 he managed to obtain congressional funding for the collection and distribution of seeds, plants and agricultural statistics.¹⁴

Between 1838 and 1842, Commander Charles Wilkes' ship cruised the Pacific under order to secure new agricultural plants. By 1848 ships of the East India Squadron were regularly collecting plants. The genetic fruit of imperial adventure of Perry's naval expedition of 1853 included seeds cuttings of vegetables, barley, rice, beans, cotton, persimmon, tangerine, roses and "three barrels of the best wheat of Cape Town".¹⁵ In 1842, a green house was established in Washington for the preservation of botanical collections, and in 1857 a propagating garden was established for the multiplication of introduced varieties. By 1800, a host of crops was firmly established and formed the base for a variety of regional agricultural economics. Foreign plant genes had been successfully domesticated and a firm agricultural foundation prepared for the

¹³ Kloppenburg Jr Jack Ralph, *First the Seed*, Cambridge University Press, Cambridge, 1990, p.55.

¹⁴*ibid* p. 55

¹⁵*ibid*,p.55

rise of industrial capitalism. In the first half of the nineteenth century there were few Americans active in business, politics, or the professions who did not have some direct dealings in farm property as proprietors or landlords.

These gentlemen farmers' advocated new agricultural practices, endorsed state geological surveys, and experimented with new breeds and varieties, manures and crop rotations. They also supported the institutionalization of agricultural education and research, not always disinterestedly. In 1824, the first agricultural school was founded by Stephen Van Rensselaer. By 1850, agricultural societies and journals were agitating vigorously for elevation of the Patent Office Division of Agriculture to department status and for the establishment of agricultural colleges. Over the next decade, several agricultural schools were founded in various states: Michigan, 1855; Iowa, 1858; Pennsylvania, 1859; New York, 1860.

The history of plant improvement in the United States until 1935 or so is essentially that of the continuous growth and elaboration of publicly performed research and development in a virtual vacuum of private investment. Global plant germplasm collection was initiated by the U.S. Patent Office in 1839. Thus was established a powerful tradition of state commitment to agriculture in general and the plant sciences in particular. This commitment was explicitly institutionalized in 1862 with the creation of the Department of Agriculture (USDA) and the passage of the Morrill Act, which authorized federal support for agriculturally oriented "land-grant universities" (LGUS).¹⁶The Morrill Act of 1862 was intended, in the words of the legislation, "to assure agriculture a position in research equal to that of industry". Seeds men were painfully aware that this was not the case. Private cereal and fruit breeders began calling for establishment of plant patent system as early as 1885.¹⁷ A proposal that a committee of experts should be empowered to recommend new varieties of appropriate quality for patent registration was rejected in 1901 by the American Pomological Society as "socialistic". An enduring and ironic theme of efforts to introduce Plant Breeders' Rights legislation in the United States had been proponents' insistent

¹⁶*Supra* n 9, p.12.

¹⁷*Supra* n 9, p.60.

assertions that enlarged private investment would result in superior varieties.¹⁸ At the same time, they just as adamantly rejected the imposition of any regulatory framework intended to ensure that the promised quality was in fact realised.

In 1905 the executive secretary of the newly established American Breeders Association (ABA) expressed the hope that "laws or business practice can be devised which will give private individuals, animal breeders, seed firms and nursery firms practically a patent right or a royalty on new blood lines".¹⁹ The following year such legislation was introduced in Congress, but despite testimony from supporters that "every seed is a mechanism assuredly as is a trolley car", the bill was not ready to countenance proprietary rights to genetic information.

It was another 24 years before similar legislation was reintroduced. Even so, the Plant Patent Act of 1930 covered only asexually propagated species.²⁰ The American Seed Trade Association had lobbied to have sexually reproducing species included in the Act. But while the legislators were sympathetic to the elimination of what they regarded as the "existing discrimination between plant developers and industrial inventors",²¹ they were reluctant to provide monopoly control of any variety of staple food crops. For this reason, and because of farmer opposition, they also specifically excluded tuber-propagated plants from coverage so that potato varieties could not be patented. The United States Agriculture also opposed the inclusion of sexually reproduced species on the grounds that they were not sufficiently stable genetically and the genetic drift between generations would present insurmountable difficulties in enforcement of the act.

With the passage of the Plant Patent Act a second precedent was established. Unlike the standard utility patent statute, the Plant Patent Act did not require that the invention be useful, only that it be new and distinct. Whether a novel plant variety was inferior or superior to existing new varieties was immaterial

¹⁸*Supra* n 9, p.132.

¹⁹ ABA 1905: 62

²⁰ U.S House of Representatives 1906;6.

²¹ U.S House of Representatives 1906;2.

to its patentability. Considerations of quality or utility were to have no place in the decision to grant or deny a plant patent. The passing of the Plant Patent Act 1930 at least temporarily foreclosed the possibility of legally institutionalizing proprietary rights to sexually reproduced plant varieties. This in turn led to the decade of the 1930s being one of stagnation for many seed firms. But after 1940s, a series of factors combined to make private investment in research a strategically appealing proposition even in the absence of breeders' rights.

After World War II there was a rapid growth of seed certification programmes. The levelling effect of certification cut margins almost to cost of production. A number of companies, in desperation, initiated marketing efforts based on uncertified seeds marked with a brand name. This product differentiation paid handsomely; the key to profitability was a proprietary product and compelling advertising.²² The Federal Seed Act of 1939 theoretically prohibited the use of synonyms for a single variety. So to avoid contravention of this Act the development of proprietary varieties meant research.

By 1950 this prospect of research proved to be less daunting to private companies than it ever had earlier been. The State Agricultural Experiment Stations' and the 'Land Grant University Complex had developed systematic and proved breeding techniques allowing predictable manipulation of plants. Moreover, there was a steady stream of quality germplasm flowing from public breeders that with minor alterations made for highly marketable "proprietary" varieties. Between 1939 and 1958 there was evidence that hybrids especially corn were doing well. Hybridisation had provided a solution to the biological barrier to capital penetration posed by the seed. At the same time companies engaged in hybrid corn production had been able to supplant public agencies, as the principal developers of commercial varieties. In moving systematically into research and the development of private plant varieties during the 1950s commercial seed enterprises sought to assume functions that had historically been discharged by public agricultural science.

²²*Supra* n 9, p.133.

To promote the interests of private breeders the National Council of Commercial Plant Breeders (NCCPB) was established in 1954. This Council spear headed the battle cry of the private companies wanting to expand their research programmes by focussing on the distinctions between basic research and applied research." A second line of attack involved efforts to eliminate or at least weaken the regulatory programmes that disciplined the market and provided some assurance of quality in commercially available plant varieties. During the late 1950s the seed industry argued that neither recommendation nor performance should be used to determine eligibility for certification." Seeds men asserted that certification should be based on varietal purity only and that any determination of quality should be left to the consumer. This would in turn lead to opening up the market based on product differentiation and thus facilitate the marketing of privately developed cultivars.

To pursue its objective of opening space for its own research and marketing efforts, private industry undertook a loosely organized but systematic lobbying effort to move public researches and programmes in desired direction. In 1956 the American Seed Trade Association initiated annual Farm Seed Industry-Research Conferences designed, as a seed executive stated at the first meeting, to achieve "complete understanding confidence and cooperation between science and industry."²³ Members of the seed trade also became regular participants in the annual meetings of such groups as the Agricultural Research Institute, the American Society of Agronomy, the International Crop Improvement Association, and the American Society for Horticultural Science. In the proceedings and publications of these organizations one can clearly see the division of labour between public and private breeders being gradually and progressively negotiated and renegotiated.²⁴

In the United States in the late 1950s, certified seeds were rapidly losing ground to brand name products. From a predominantly farmer-grower service,

²³Apfelbaum Robert S, "Taking research to the farmer", (edited by Heckendorn William, Gregory Joseph, Proceedings of the First Annual Farm Seed Industry – Research Conference, American Seed Trade Association, Washington D.C., p.58.

²⁴ Kloppenburg Jr Jack Ralph, *First the Seed*, Cambridge University Press, Cambridge, 1990, p.135.

certification turned its attention towards methods and procedures that better served the seed industry.²⁵

Substantial research investments had been made, principally by large companies and firms enjoying the high profit margins associated with hybrid corn and sorghum production. Even as early as 1959 the industry was clearly becoming more concentrated and smaller firms and individual growers found it increasingly difficult to compete. Great structural were transforming American farming from a way of life into business. The historical circumstances were ripe for the re-emergence of the question of plant breeders' right for sexually reproduced species.

The immediate catalyst for the revival of the issue of breeders' rights in the United States was the creation in 1961 of the Union for the Protection of New Varieties of Plants by six European nations to provide an international legal framework for Plant Breeders Right legislation.²⁶ Following the establishment of this union the American Seed Trade Association immediately initiated a study group to examine the European system and consider its usefulness in the American context.

Under UPOV the European seed companies obtained patent like protection only if they could show that the new cultivars were demonstrably superior.

But, the American seed companies had so far been used to releasing varieties of obvious and dubious merit. Any sort of quality control was to have a disastrous effect on the seed companies in America. The decade of the 1960s was marked by a process of negotiation between public and private breeders as to the shape that plant breeders right legislation might most appropriately take if, in fact it was necessary at all.²⁷ Private interests insisted that prospective legislation include no requirements for performance testing and opposed anything that would tend to restrict marketing of new varieties. The seed

²⁵ Beard D, "Certification for Varietal Purity Only", (edited by Sotherland John), proceedings of the Twelfth Farm Seed Research Conference, American Seed Trade Association, Washington D.C., 1966. P.47.

²⁶ Berian Jean-Pierre. Lewomin Richard, Breeders' rights patenting life forms, Nature 322, 28 August 1986, p.785-788, Innes N.L., Patents and Plant Breeding, Nature 298, 26 August, 1982, p.786.

²⁷ *Supra* n 20, p.137

industry looked upon plant breeders' rights as more of a marketing legislation. While the seed company executives principal justification of the need for plant breeders' rights was the anticipated flow of superior plant varieties that would result from increased private investment in breeding the seed industry steadfastly opposed the creation of any institutional mechanism for ensuring that new varieties were in fact improvements.²⁸ A second prime motivation for the seed industry was the opportunity to use plant breeders' right to lever public agencies away from the release of finished varieties, thereby also facilitating the marketing of proprietary products.²⁹ Plant breeders' right was seen as providing an argument for the emasculation of public breeding and its relegation to "basic" research complementary to rather than competitive with private enterprises.

Many public breeders were sympathetic to some form of plant breeder rights but at the same time they could see the negative consequences associated with a strong law. Public breeders feared the possibility of their own marginalisation and insisted that any variety protection system should be open to publicly as well as privately developed cultivars.

These issues were brought to a head in 1967, when the American Seed Trade Association took advantage of a patent-law revision then under way in Congress under the auspices of the President's Commission on the Patent system and introduced a bill of elegant simplicity and potentially enormous consequence. Had this been passed it would have brought under its purview all sexually reproducing crops.

The result of this realization was an intensive series of meetings involving representatives of the United States Department of Agriculture, the state institutions, the American Seed Trade Association, the National Council of commercial Plant Breeders and the Association of Official Seed Certifying Agencies.³⁰ The ASTA's in 1969 drafted a bill entitled the Plant Variety Protection Act (PVPA). This document became the basis of negotiation and the vehicle by which plant breeders right was ultimately institutionalised in the

²⁸ *ibid*

²⁹ *ibid*, p.138

³⁰ *Supra* n.20,p.139

United States. Novelty, uniformity and stability were to be sole criteria for protection. If these characteristics could be demonstrated, then a certificate of protection would be issued for the new variety. The U.S. seed industry thus succeeded in its principal objective of obtaining proprietary rights to new varieties unhampered by any considerations as to quality. This draft bill gave the variety's originator the right to exclude others from using it for a period of seventeen years. The public agencies introduced language ensuring that products of their breeding plots were eligible for protection that farmers could save and replant protected seed (and even sell to neighbours) without infringement, and that protected varieties could be used for research purposes. It was explicitly recognised that a system of variety protection would regrettably but inevitably reduce freedom of germplasm exchange.

However, in response to the fears expressed by vegetable canning and freezing interests that monopoly control of commercial varieties would lead to substantial rises in the price of seed, six vegetable species were excluded from the coverage of the Act.³¹ After brief congressional hearings and Senate testimony the Plant Variety Protection Act became law on December 24, 1970.

As far as the U.S. agricultural scenario is concerned there can be no doubt that since 1970 there have been very substantial increases both in the number of firms engaged in plant breeding and in the absolute level of money expended for research. Concomitant increases in facilities and research personnel have also been noted.

There is little evidence to support the contention that the Plant Variety Protection Act has powerfully stimulated additional private investment in plant breeding research. Much of the investment that has been forthcoming would probably have been made even in the absence of the act. More firms are doing more research, but the intensity of their effort has, since 1970, been more or less flat. Cereals and soybeans do show significant shifts after 1970, but even here the connection with the Plant Variety Protection Act is by no means clear. Private breeding activities, despite the growth in their magnitude

³¹ Senate 1970, p.87-9

since 1970, have not resulted in an increment of yield gain over the historical trend established by public researchers prior to 1970.

The Plant Variety Protection Act was pursued by the seed industry primarily as a mechanism for permitting the differentiation of its products. Varietal improvement was not necessarily thought to be the outcome of research but a larger selection of choices for the farmer was the principal goal. This goal had indeed been achieved since by December 31, 1985, a total of 1,462 certificates of protection had been granted by the Plant Variety Protection Office.³²

In 1980 congressional hearings convened to examine the extension of the PVPA to include coverage of the six vegetable species exempted in 1970. However the 1981 revision of the PVPA not only extended coverage to six additional species but also brought the act into accord with the Paris Convention and enabled the United States to become a member of UPOV.

2.3.2 EUROPE

Spain, France, Portugal and England the dominant European powers had practically colonized the entire world in the 18th and 19th centuries. All the agricultural produce from their tropical colonies were shipped back to colonial rulers. Initially what were private expeditions turned out to be government monopolies? Brazil, Malaysia, China and India sent their produce of coffee, rubber, tea and spices to the European markets. The English did a lot for the improvisation of tea varieties in India but all this were directly controlled by the British government. There was no question of private interference. The same was the case in Spanish, French and Portuguese colonies.

However towards the early twentieth century these colonial rulers began giving up their colonies thus ending their stranglehold over the agricultural produce of the various colonies. Up to the last century most farmers in Britain obtained seed by saving it from their previous year's crop trading seeds of different crops and varieties with other farmers.³³ Even today about 30 per

³²*Supra* n 20., p 143.

³³Clumies- Ross Tracy, "Creeping enclosure", *The Ecologist*, Vol 26, No 3, 1996, p.110

cent of seed in Britain may be "farm saved" whilst in southern Europe, the figure is as high as 80 per cent for many crops.

In much of Britain and the European Union, however there has been a gradual transition from dependence on farm-saved seed to reliance on seed produced by professional plant breeders and specialist seed growers.³⁴ For some crops such as wheat, large, expensive and sophisticated breeding programmes took over from farmers and gardeners over a hundred years again Britain and parts of northern Europe, while for others, particularly fruit and vegetables smaller often family farms continued to be involved in the developing and marketing of new varieties for another 50 years or more. The growth in the plant breeding industry has been accompanied by legal controls over the development, sale and reproduction of crops. Although in Britain it was an offence as early as 1869 to sell any "killed or dyed" agricultural or garden seeds with an intent to defraud, and a certain measure of control was exercised in Ireland from 1909, it was the threat of food shortages during the First World War which stipulated more comprehensive seed control measures.

The 1920 Seeds Act designed to protect commercial seed buying farmers, growers and gardeners required a seed seller to disclose certain information about their seeds, such as analytical purity and germination rate. All seeds had to carry the name and address of the seller and to name the kind of seed (for instance, wheat or barley or pea). Certain kinds of seeds (principally cereals and certain clovers) also had to carry the name of the variety. No minimum standard were not set, nor was any legal restriction set on a buyer's choice of seed.

By the 1930s however emphasis began to shift away from protecting buyers of seeds towards protecting and encouraging plant breeders and sellers. It was thought necessary to provide incentives to farmers to use new varieties developed by plant breeders and to discourage them from using "unsuitable" ones by keeping the seeds of such varieties off the market.

³⁴*Ibid.*,p.110.

At about the same time AIPPI started holding discussions about the subject, more precisely, in 1932 at the London Congress, when Herzfeld, Wuesthoffin his report on Protection legale des nouvelles varieties de plants³⁵ first introduced the issue of the legal protection of new varieties of plants. Wuesthoff had suggested a dual system for protecting new varieties plants. Patent protection he said should be generally admitted for protecting particularly important inventions in horticultural productions while for varieties of minor importance he visualised a special type of protection in line with the then German draft law.

Wuesthoff eventually proposed that the national groups should approach their governments and ask for appropriate legislative measures to secure a protection identical or analogous to patent protection for new varieties of plants.³⁶ The report of Wuesthoff was seconded by the Secretary of the German National group, Moser Von Filsec, who stressed that if various states were to establish laws in this field before the Association was concerned with the problem, the later realisation of international protection would become difficult. However, the then Reporter General Andre Taillefer noted that as this question was not on the programme of the London Congress it had to be reserved for one of the next congresses.

In the 1952 AIPPI Congress in Vienna a resolution was adopted which provided that, in order to achieve effective protection for new plant varieties, the legislation of the countries of the Union had to provide for patents or equivalent protection for plants (vegetaux) that possessed new and important properties for their exploitation, and provide that their propagation was assured.

Place on an equal footing an invention's suitability for use in agriculture, sylviculture, market gardening and other comparable fields, and an invention's suitability for use in industry as provided in patent laws of many countries.³⁷ The reports of the national groups presented at this meeting were strongly in

³⁵ Annuaire AIPPI 582.

³⁶ Straus Joseph, "AIPPI and the Protection of Inventions in Plants – Post Developments, Future Perspectives", IIC, Vol 20, No 5, 1989, p.606.

³⁷ Of 1952 Annuaire AIPPI 70.

favour of effective protection for new varieties of plants. Whereas the German Report again suggested the introduction of a dual system and the Dutch and Swiss Report viewed patent or an equivalent special protection equally favourably, the Danish, French and Italian Group clearly gave priority to the patents.³⁸ On the other hand, the British and the Luxembourg National Group advocated a special system of protection.³⁹ The opinion of those groups which advocated patent protection was explicitly shared by M.Tourneur, the President of ASSINSEL (Association Internationale des Selectioneurs pour la Protection des Vegetables), who also attended the Executive committee meeting and made a statement which he concluded by asking the Congress to adopt the principle of protecting plants by patents.⁴⁰

After the Vienna Congress and before the draft of the UPOV Convention was published the AIPPI had discussed the issue of plant protection on two further occasions: at the Executive committee meeting at Locarno in 1950 and at the Congress at Brussels in 1954. Apart from discussions as to how the protection desired should be technically established, i.e., whether its embodiment in the existing forms of industrial property laws should be pursued as the only alternative or whether the establishment of an additional complementary protection system should also be envisaged, there was a clear agreement that the rights of plant breeders should by no means be of a lesser scope and extent than those conferred on other inventors.⁴¹ At Brussels the AIPPI by a great majority of votes expressed the desire that in the legislation of each country of the Union: "1. Invention, belonging to the vegetable kingdom be assimilated from the point of view of legal protection, to industrial inventions, in line with Article 1 & 3 of the text of the Union Convention for the Protection of Industrial Property."⁴²

A great majority of the AIPPI including the plant breeders association ASSINSEL thus largely favoured patent protection as the most if not the only

³⁸*ibid* 392, 395, 407.

³⁹*ibid*, 401, 413.

⁴⁰ "the Report on M.E. Tournneur's Statement" in 1952 *Annuaire AIPPI* 67.

⁴¹ Straus Joseph, "AIPPI and the Protection of Inventions in Plants – Post Developments, Future Perspectives", *IIC*, Vol 20, No 5, 1989, p.608.

⁴²C.f 1954 *Annuaire AIPPI* 63

suitable form for protecting inventions in plants. However, some national groups were of the opinion that some creations of plants could not meet all patentability criteria. Therefore they suggested that either an additional complementary or a new, but with regard to the scope and extent of protection equivalent or analogous, system of protection should be established.⁴³

The efforts for providing a protection "identical or equivalent" to patent protection for inventions in plants, however, eventually failed. When in 1961 the UPOV Convention in Paris was signed an instrument for protecting new varieties of plants came into being, which with regard to protection requirements (homogeneity, stability, variety denomination), official examination of varieties based on field trials, national lists of protected tax and even more so with regard to the limited scope of protection, including the so-called breeders' exemption (i.e. the free utilisation of protected varieties for creating as well as commercialising new ones) had its roots primarily in the provisions regulating the distribution and trade in seeds, e.g. as then existing in the Federal Republic of Germany.⁴⁴ The latter on their part originated from administrative provisions aimed at market supply and consumer protection and were strongly influenced by the general shortage in food supply in the thirties and post-war Europe.

Moreover, this instrument which deliberately was placed outside the traditional international network for protecting industrial property i.e., outside the Paris Convention of 1883, limited considerably the basic principle of national treatment underlying the latter Convention.

2.3.3 INDIA

In India diversity has always been the key to food security, contributing to the efficient production of food, fodder and shelter. In addition to cultivated crops, people routinely utilize a wide variety of biodiversity from forest and

⁴³C.f 1954 Annuaire AIPPI 175

⁴⁴ Straus Joseph, "AIPPI and the Protection of Inventions in Plants – Post Developments, Future Perspectives", IIC, Vol 20, No 5, 1989, p.609.

commons which are an integral part of food security, especially important in times of crisis.⁴⁵

In India even before the founding of the modern state, indeed before the rise of the great early civilizations, our ancient ancestors were identifying, developing and using plant genetic resources. As they began to make the transition from hunting and gathering to agriculture some thousands of years ago, they began to encourage the growth and production of certain favoured plant - species plants valued for religious, medicinal, food, flavouring or other utilitarian purposes. Slowly these practices led to the domestication of virtually all the agricultural species we depend on today.⁴⁶ For many hundreds of years, farmers and farm families in rural India have been overseeing evolution in crops, combining genes in new and different ways to form 'landraces' and varieties suited to their needs.

Biodiversity has always been a local commonly owned and utilised resource for indigenous communities.⁴⁷ A resource is common property when social systems exist to use it on the principles of justice and sustainability. This involves a combination of rights and responsibilities among users, a combination of utilisation and conservation, a sense of co-production with nature and sharing them among members of diverse communities. They do not view their heritage in terms of property at all, i.e., a good which has an owner and is used for the purpose of extracting economic benefits, but instead they view it in terms of possessing community and individual responsibility. For indigenous peoples, heritage is a bundle of relationships rather than a bundle of economic rights.⁴⁸ That is the reason no concept of 'private property' exists among the communities for common resources.

Within indigenous communities, despite some innovations being first introduced by individuals, innovation is seen as social and collective

⁴⁵ "The Leipzig Commitment in Agricultural Biodiversity", Third World Resurgence, Issue No 72/73, 1996

⁴⁶ "The state of the world's plant genetic resources; Diversity and erosion", Third World Resurgence, Issue No.72/73, 1996.

⁴⁷ Shiva Vandana. JalfriAfsar H., BediGitanjali, Hotla-BharRadha, The Enclosure and Recovery of the Commons. Research Foundation for Science, Technology and Ecology, New Delhi, 1997, p.9.

⁴⁸ *ibid*

phenomena and results of innovation are freely available to anyone who wants to use them consequently, not only the biodiversity but its utilisation has also been in the commons, being freely exchanged both within and between communities. Common resource knowledge based innovations have been passed on over centuries to new generations and adopted for newer uses, and these innovations have over time been absorbed into the common pool of knowledge about that resource. This common pool of knowledge has contributed immeasurably to the vast agricultural and medicinal plant diversity that exists today. Thus, the concept of individual 'property' rights to either the resource or to knowledge remains alien to the local community.

2.4. THE RELEVANT INTERNATIONAL AGREEMENT AND ESTABLISHMENTS CONCERNING INTELLECTUAL PROPERTY RIGHTS IN PLANT VARIETIES.

Before turning to a lot of elaborate discussion of policy objectives, it's vital first to spot the principal international establishments and international agreements that generate legal rules and standards concerning IPRs in plant varieties and plant genetic resources, as well because the establishments and agreements that generate rules and standards in tension with IPRs. Though a comprehensive discussion of those establishments and agreements is on the far side the scope of this study, a basic familiarity with their most significant parts is important to grasp the legal regime of intellectual property rights in plant genetic resources for food and agriculture.⁴⁹

2.4.1. WORLD INTELLECTUAL PROPERTY ORGANIZATION ("WIPO")

The World intellectual property Organization ("WIPO") could be a specialised agency of the United Nations charged with "promote[ing] the protection of intellectual property throughout the globe." (WIPO Convention, art. 3(i)). The WIPO Secretariat undertakes wide selection of activities concerning IPRs, as well as hosting diplomatic conferences of government representatives seeking

⁴⁹Helfer, 2004, pp. 34-42

to barter new international treaties. WIPO's workers additionally offer technical help and coaching to member states and their national material possession offices, particularly in developing countries. a lot of recently, WIPO has created standing, professional and intergovernmental committees that conduct studies on specific intellectual property topics and generate nonbinding guidelines and suggestions for consideration by WIPO members.

WIPO's recent activities within the space of plant genetic resources are wide. Problems concerning the intersection of IPRs and PGRs are raised throughout the negotiation of 2 three-cornered patent agreements (the legal philosophy written agreement and also the Substantive legal philosophy Treaty) and are a principal subject of dialogue and study within the recently created Intergovernmental Committee on material possession and Genetic Resources, mental object and lore ("IGC").

Developing states 1st sought-after to boost problems concerning the intersection of IPRs and PGRs throughout the WIPO-sponsored negotiation of the legal philosophy written agreement in 1999. They projected the addition of an editorial within the written agreement requiring candidates for inventions derived from genetic resources to demonstrate that they'd received permission to access those resources from the country of origin. Industrialised countries opposed the proposal, disputation that it self-addressed substantive law problems that were inappropriate for inclusion in a very treaty for the most part dedicated to procedural problems. As a compromise, the WIPO Secretariat projected the creation of a brand new intergovernmental committee (the IGC) to check the intellectual property aspects of genetic resources and traditional knowledge.⁵⁰

During the IGC's first five sessions between Apr 2001 and July 2003, WIPO members have supported a wide-ranging work programme for the Committee, including: (1) creating a searchable info of clauses in contracts that regulate access to genetic resources or require profit sharing; (2) finding out technical issues raised by the revealing of biodiversity-related info in patent applications; (3) making databases of traditional knowledge; (4)

⁵⁰Helfer, 2004, pp. 69 and 70

distinguishing ways that to document genetic resources and traditional knowledge within the public domain; and (5) finding out the appropriate legal rules to protect ancient knowledge. most recently, the WIPO General Assembly extended the IGC's mandate and approved it to accelerate its work, which may embrace the development of latest international agreements.⁵¹

2.4.2 WORLD TRADE ORGANIZATION("WTO")

The WTO could be an international intergovernmental organization dealing with the rules of trade between nations. It was established in 1994 at the conclusion of the Uruguay round of trade negotiations command beneath the auspices of the final Agreement on Tariffs and Trade ("GATT"). As of July 2004, 147 states and customs territories ("WTO Members" or "Members") had joined the organization. The WTO's substantive obligations are contained in a very series of treaties relating to international trade, as well as agreements on trade goods, services, agriculture, sanitary and phytosanitary measures, trade-related investment measures, technical barriers to trade, textiles and wear and intellectual property rights. These treaties are linked along as annexes to the Agreement Establishing the WTO. Disputes between WTO Members relating to any of those treaties are to be resolved by the WTO Dispute Settlement Body, that consists of ad hoc dispute settlement panels and a standing appellant Body of trade specialists. A WTO Member whose national laws or practices are challenged by another WTO Member and found to be incompatible with its WTO treaty obligations by the Dispute Settlement Body should modify those laws or practices or face the prospect of trade sanctions.

2.4.3 CONVENTION ON BIOLOGICAL DIVERSITY ("CBD")

The CBD was opened for signature in 1992 and entered into force in 1993. As of July 2004, 188 states had ratified this agreement.

The CBD's main objectives are the conservation of biological diversity, the sustainable use of its components, the fair and equitable sharing of benefits arising out of the utilization of genetic resources and also the preservation of

⁵¹Helfer, 2004, pp. 70 and 71

native data. (art. 1) The CBD also acknowledges that nation states have the sovereign right to use their own resources and also the authority to work out the conditions of access to them. (arts. 3 and 15)

One of the mechanisms by that the CBD achieves its objectives is in place conservation of plant genetic resources. Conservation in place involves the preservation of ecosystems and natural habitats and also the maintenance of viable populations of species in those settings. Such conservation happens, for instance, wherever farmers and native communities safeguard traditional plant varieties in the locations wherever they grow naturally or cultivated.

Although the CBD doesn't expressly sit down with any international IPR agreements, it contains numerous provisions concerning IPRs, principally in article 16. In particular, article 16(5) recognizes that IPRs "may have an influence on the implementation" of the CBD. The article obliges member states to cooperate so as to confirm that IPRs are "supportive of and don't run counter to" the treaty's objectives. Other provisions make clear that the CBD is to be interpreted thus on preserve the rights of IPR owners recognized in law. For instance, articles 16(2)-(4) state that the transfer of technology and measures taken to achieve access to such technology shall be per the adequate and effective protection of IPRs recognized in law. Thus, for instance, wherever a government encourages foreign direct investment in industrial technologies (such as a biotechnological method wont to insert new genetic sequences into existing plant varieties), it should respect any patent rights that the owner of that technology has no inheritable to safeguard it.

Over time, the diversity regime's approach to intellectual property protection has evolved on the far side the text of the CBD. The Conference of the Parties (COP) - the convocation of CBD members that determines however the Convention should be applied and implemented - has given elaborate attention to harmonizing IPRs with the CBD's objectives. Particularly, developing countries active within the COP, alongside the support of nongovernmental organizations, have expressed concern about the adverse effects of IPRs and have sought to harness intellectual property rules to market compliance with the Convention.

In response to this concern, official COP statements have stressed the need to "promote increased mutual supportiveness and integration of biological diversity considerations and also the protection of intellectual property rights.") Members of the COP have worked toward this objective by gathering info, commission case studies, holding workshops and drafting guidelines and suggestions. For instance, in Apr 2002, the COP adopted the "Bonn guidelines on Access to Genetic Resources and fair and just sharing of the benefits arising Out of their Utilization." Guidelines' most significant recommendation encourages candidates for IPRs like patents or plant breeders' rights to disclose the country of origin of the genetic resources or the normal data upon that those IPRs are based mostly. The rules advocate these disclosures to observe whether or not candidates for IPRs have obtained the previous consent of the country of origin and complied with the conditions of access (if any) that that country has adopted.

Although the COP members adopted the bonn guidelines by accord, the Guidelines' reliance upon intellectual property laws to market compliance with the obligations of the CBD remains polemic. For instance, a 2003 Communication from the EU Commission to the EU Parliament on the EC's implementation of the Bonn pointers considers whether to adopt "a self-standing revealing requirement" for patent and plant selection protection candidates. (EC Implementation of Bonn pointers, COM (2003) 821) If adopted, such a revealing requirement wouldn't, however, be incorporated into national or European intellectual property laws. To the contrary, the failure to comply with the new disclosure requirement would, according to the European Union Communication, "only have consequences outside the field of patent law." However, the European Union Communication also states that the European Union and its member states "should be ready to discuss, within the relevant international fora, the possibility of introducing beneath material possession law constant revealing requirement... as a formal condition for patentability and not only as a self-standing obligation."

2.4.4 THE CONSULTATIVE GROUP ON INTERNATIONAL AGRICULTURAL ANALYSIS ("CGIAR")

CGIAR is an informal association of public and private donors founded in 1971 that supports an international network of agricultural research centres, every with its own governing body. CGIAR's mission is to have interaction in analysis, in partnership with different public and private entities, to promote sustainable agriculture in developing nations. With respect to plant genetic resources, CGIAR's principal method for achieving this objective is ex situ conservation. Networks of factor banks at intervals CGIAR store and conserve seeds and propagating materials outside of their natural habitat for future use by farmers, researchers and breeders. The CGIAR network holds the world's largest ex situ collection of plant genetic resources for food and agriculture.

2.4.5 INTERNATIONAL PLANT GENETIC RESOURCES INSTITUTE ("IPGRI")

IPGRI is that the world's largest international institute dedicated to the conservation and use of plant genetic resources. Based in 1974, IPGRI focuses on conservation, management and preservation of the diversity of plant genetic resources, through domestic, regional and international programmes and analysis initiatives.

The International undertaking on Plant Genetic Resources (the "Undertaking")

FAO has helped to generate many nonbinding international instruments with reference to plant genetic resources. The undertaking, the primary of those instruments, was adopted in 1983. As of 2000, 113 states were signatories to the undertaking, therefore pledging themselves to implement the recommendations it contains. for many years, the undertaking served as the central papers in FAO's international system for plant genetic resources, a system that features a fund for the equitable sharing of advantages and a mechanism to provide early warning concerning genetic resources underneath threat.

The Undertaking's principal objectives are to make sure that the necessity for conservation is globally recognized which sufficient funds for this purpose are created available; to help farmers and farming communities in the protection and conservation of PGRs and of the natural biosphere; and to permit farmers,

their communities and countries to participate absolutely within the edges derived from improved uses of PGRs, as well as through plant breeding.

In its initial formulation, the enterprise challenged a private property rights approach to plant genetic resources by declaring that all such resources, whether or not as cultivated by farmers within the field or changed through breeder innovations, were a part of the "common heritage of mankind and consequently ought to be offered while not restriction." (art.1). an interpretation issued adopted by Food and Agriculture Organization of the United Nations in 1989, however, processed that plant breeders' rights weren't incompatible with the endeavour. (Resolution No. 4/89 adopted by Food and Agriculture Organization of the United Nations Conference 25th Session, Rome, 11-20 Nov 1989) It conjointly recognized the interrelation between the rights of traditional farmers (whose follow of saving seeds provided the raw genetic materials for innovation) and therefore the rights of plant breeders (who use technology to achieve that innovation).

2.4.6 THE INTERNATIONAL TREATY ON PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE ("ITPGR")

On three Nov 2001, associate degree intergovernmental conference sponsored by Food and Agriculture Organization of the United Nations adopted the text of a de jure binding international agreement on plant genetic resources. The ITPGR entered into force on 29 June 2004. As of July of that year, the treaty had been sanctioned by 55 states and signed by a further 50 countries. The ITPGR not solely codifies and updates the nonbinding principles set out within the undertaking and its succeeding revisions, however conjointly contains provisions relevant to IPRs in plant genetic resources and plant varieties.

2.4.7 THE TRIPS AGREEMENT

Although the UPOV Acts have provided IPR protection for plant varieties for more than forty years, their significance has recently been overshadowed by a unique intellectual property 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 that the 1st and only IPR accord 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. though the TRIPS Agreement devotes solely minimal attention to plant breeders' rights or plant variety protection and doesn't even mention the UPOV Acts, its adoption has done more to encourage the legal protection of plant varieties than any other international agreement.

2.4.7. A TRIPS AS A SPUR TO PLANT VARIETY PROTECTION

TRIPS' influence on plant variety protection stems from the following sources: (1) its link to other international trade agreements; (2) its widespread adherence by states in both the industrialised and developing world; (3) its novel enforcement, review and dispute settlement provisions; (4) the requirement in TRIPS article 27.3(b) that its signatories must give protection for plant varieties "either by patents or by an effective sui generis system or by any combination thereof"; and (5) a proper review of article 27.3(b) that was scheduled to be held in 1999. The subsequent paragraphs shortly address every one of those 5 issues. Ensuing sections devote additional elaborated treatment to the protection of plant varieties with patents and to the elements necessary to form an "effective sui generis system."

2.4.7. B THE RELATIONSHIP OF TRIPS TO THE WORLD TRADE ORGANIZATION AND ALSO THE INTERNATIONAL TRADING SYSTEM

Unlike all previous intellectual property treaties, a TRIPS isn't a free-standing agreement entered into solely with IPRs. Rather, TRIPS is joined to a bigger family of trade-related agreements regarding subjects like interchange product and services, agriculture, textiles and health-related restrictions on imports. All of those agreements were adopted at intervals the World Trade Organization

throughout the Uruguay round of trade negotiations control between 1988 and 1994. As such, TRIPS was a part of a world "package deal." industrialised nations secured a commitment from developing nations to supply minimum standards of effective legal protection to intellectual property product, and in exchange developing nations received a commitment from industrialised countries to open their domestic markets to merchandise and other product manufactured within the developing world.⁵²

2.4.7. C WIDESPREAD ADHERENCE TO TRIPS

The results of this international discount were widespread adherence to all or any World Trade Organization Agreements, as well as the TRIPS Agreement. As of July 2004, 147 states or customs territories were indebted to comply with TRIPS by virtue of their membership within the World Trade Organization. Additionally, many countries (particularly those within the developing world) World Health Organization became sure by TRIPS had not legal earlier intellectual property treaties and were so needed to form important changes to their national laws to bring them into compliance with the Agreement. In acknowledgement of this reality, TRIPS contains a phase-in provision consistent to that most of the treaty's substantive obligations became binding for developed nations in 1996, however failed to become binding on developing nations and nations in transition to plug economies till 2000. Least developed nations are given the foremost leeway and aren't needed to implement the treaty's substantive obligations till 2006.

2.4.7. D THE ENFORCEMENT, REVIEW AND DISPUTE SETTLEMENT PROVISIONS OF TRIPS

In addition to its widespread adherence, the influence of the TRIPS Agreement may be copied to its distinctive provisions regarding the social control of IPRs at intervals national laws, the review of these national laws by the TRIPS Council and also the mechanism for settlement of disputes between states resulting in rulings protected by the threat of trade sanctions.

⁵²Helfer, 1998, p. 377

2.4.7. E ENFORCEMENT PROVISIONS

Not like previous IPR agreements, a trip doesn't solely specify the minimum substantive necessities for varied styles of intellectual property. In addition, it needs World Trade Organization Members to adopt "effective" provisions among their national laws to allow the owners of intellectual property product to enforce their rights against people who infringe them. (art. 41.1) These enforcement provisions include elaborated judicial and administrative remedies, border measures and criminal procedures. (articles 41 to 61) to require just one example applied to plant varieties, a breeder whose new selection is oversubscribed commercially while not permission should be ready to bring a civil judicial action seeking an injunction to prevent the conduct of the unauthorized marketer and to recover damages from him or her.

2.4.7. F REVIEW PROVISIONS

Article 68 establishes a Council for trips to "monitor the operation of the Agreement and... Members' compliance with their obligations" beneath the treaty. Since its start, one of the Council's principal functions has been to formally review the national laws, rules and judicial choices of World Trade Organization Members in every space of intellectual property coated by trips.

Several goals are served by the trips Council's review functions. First, the reviews produce an incentive for governments to bring their national laws and practices into compliance with the Agreement so they'll gift positive data to the Council. Second, the reviews determine for each the reviewed state and for different World Trade Organization Members areas of the law which cannot be fully compliance with the accord. And at last, trips Council reviews offer a crucial chance to publicize national laws and practices with reference to IPRs which could well be tough to get.

In the space of plant varieties, the trips Council has gathered and arranged a substantial quantity of helpful info regarding national government practices. In Dec 1998 the Council ready a close list of queries regarding plant variety protection. It asked World Trade Organization Members World Health

Organization were already indebted to safeguard plant varieties to retort to those queries by indicating the way within which their national laws offer such protection, with alternative World Trade Organization Members requested to use their best efforts to furnish such info. The Council later received and revealed responses from 17 states and from the European Communities and its member states. In 2001 and 2002, the Council reissued these queries and invited World Trade Organization Members that had not already done thus to supply info on their plant variety protection practices. Extra responses were received from six states.

2.4.7. G DISPUTE SETTLEMENT PROVISIONS

Another vital innovation of trips is its dispute settlement system. Though previous intellectual property agreements, together with the UPOV Acts, contained provisions for filing of complaints against non-complying accord parties before the International Court of Justice, no state ever invoked this dispute settlement choice. It absolutely was widely believed that following such a criticism would be perceived as an unfriendly act, would be long and costly which states were unlikely to implement selections of the court.⁵³ The trips Agreement removes every of those considerations by linking to a World Trade Organization Agreement referred to as the Dispute Settlement Understanding that contains an efficient dispute settlement mechanism that's one of the foremost widely used and effective interstate dispute resolution systems in international law. Indeed, the mere existence of such a system creates robust incentives for World Trade Organization Members to bring their national laws into compliance with the World Trade Organization Agreements, as well as trips, to avoid the chance of dispute settlement proceedings.

These robust incentives still, some countries might not obey. In such a case, wherever one World Trade Organization Member believes that another Member has didn't fulfil its obligations below the Agreement; it should initiate consultations below the Dispute Settlement Understanding with a read to breakdown the dispute. If the parties fail to succeed in agreement, the fretful

⁵³Helfer, 1998, pp. 375 and 376

state could then request the World Trade Organization to convene a three-member panel of specialists to review its allegations. Such panels usually issue a call at intervals six months. The panel's call is adopted by the WTO's Dispute Settlement Body unless the losing party or parties elect to attractiveness the choice to the seven-member proceeding Body, a standing court of seven trade specialists World Health Organization area unit approved to review the panel's findings and issue a call at intervals 3 months. If either the proceeding Body or an previewed panel call concludes that a World Trade Organization Member has desecrated the journeys Agreement, the Dispute Settlement Body can suggest that the defensive state bring its national laws into compliance with the accord. If the state fails to try to thus, the fretful state could then start an arbitration continuing to specify the quantity of compensation that the defensive state should pay to remedy the violation or in part of such compensation the fretful state could look for authorization to impose trade sanctions on the non-complying Member.

As of July 2004, World Trade Organization Members (mostly developed nations) had commenced 24 dispute settlement proceedings against each developed and developing nations regarding a good type of intellectual property problems. (WTO Dispute Settlement: Index of Disputes Issues: 15 July 2004) around one third of those disputes were resolved before a call by a panel, with the defensive state agreeing to change its laws to bring them into compliance with the Agreement. In alternative cases, however, World Trade Organization Members complied solely when a panel or the proceeding Body had issued a call against them. And in a very few instances, Members that haven't changed their laws instead have negotiated settlements involving the payment of compensation to the grumbling Member.⁵⁴

As of the date of this study, there are no trips dispute settlement proceedings with reference to intellectual property protection for plant varieties. whether or not such proceedings are going to be brought within the future depends on variety of variables, several of that area unit still unsure.

⁵⁴Geuze & Wager, 1999

Three reticulated reasons recommend that a dispute settlement continuing regarding plant variety protection could be a probably possibility: first, the significant distinction of views among World Trade Organization Members over the scope of legal protection to be provided to plant varieties; second, the very fact that developing country World Trade Organization Members first became tributary to guard plant varieties solely in 2000 ; and third, the absence of plant selection protection in several developing countries' national laws before the 2000 point. Taken along, these variables recommend that the plant breeders of a developed World Trade Organization Member World Health Organization learn that their protected varieties area unit being exploited while not authorization in developing world organisation Members thanks to inadequate national laws can pressure their governments to file a criticism against such states to compel them to stick to their accord obligations.

Other factors, however, recommend that a criticism over plant varieties is unlikely to be filed, significantly at intervals succeeding 5 to 10 years. First, the initiation of the port spherical of trade negotiations in Nov 2001 is probably going to cause World Trade Organization Members to indicate restraint in their dispute settlement ways whereas the multi-year negotiations area unit continuing. this can be particularly thus only if the Doha round can probably offer world organisation Members with the primary significant chance to harmonize alternative international obligations (such as those set forth within the CBD and also the ITPGR with the plant variety and alternative IPR protection necessities of the journeys Agreement. Second, past observe has shown that World Trade Organization Members area unit possibly to file dispute settlement complaints wherever they're pressured to try to to thus by the owners of intellectual property product. it's unclear whether or not plant breeders will build a comfortable showing that their overseas markets area unit being injured by alternative states' failure to supply adequate legal protection for plant varieties. Third, world organisation Members area unit usually reticent regarding filing complaints wherever their chance of success is unclear. Therefore, given the unsure scope of protection for plant varieties presently needed by trips, if Members enact some form of plant variety protection in their national laws, alternative Members area unit unlikely to

challenge those laws unless they'll determine a transparent violation of the Agreement. Still, the potential for dispute settlement proceedings and the trade sanctions will still offer robust incentives for states to enact plant variety protection laws.

2.4.7. H THE DISTINCTIVE SCOPE OF PLANT VARIETY PROTECTION NEEDED BY TRIPS

Article 27.3(b) contains the sole matter provisions of the trips Agreement with reference to plant selection protection. The article states in relevant part:

Members can also exclude from patentability: (b) plants and animals apart from microorganisms; and primarily biological processes for the assembly of plants or animals apart from non-biological and microbiological processes. However, Members shall offer for the protection for plant varieties either by patents or by an efficient sui generis system or by any combination thereof.

First, TRIPS' provisions on plant varieties don't consult with or incorporate any antecedent intellectual property agreements, together with the 1978 and 1991 UPOV Acts. This omission contrasts sharply with different fields of intellectual property, like patents, copyrights and logos, that visits expressly needs World Trade Organization Members to benefit the standards of protection contained in antecedent IPR agreements, like the national capital Convention for the Protection of Literary and Inventive Works and therefore the Paris Convention for the Protection of Commercial Property. As a result of this omission, World Trade Organization Members are neither needed to become members of UPOV nor to enact national laws in line with either UPOV Act so as to benefit their obligations beneath trips. Though the drafting history of trips doesn't make a case for this markedly totally different treatment of plant varieties, it appears seemingly that compliance with UPOV wasn't needed as a result of therefore few World Trade Organization Members were party to UPOV and people UN agency were couldn't agree upon that of its 2 most up-to-date Acts ought to function the quality for cover.

Second, article 27.3(b) permits WTO Members to safeguard plant varieties victimisation one in every of 3 distinct approaches: (1) law, (2) an efficient sui

generis system or (3) a mix of parts from each system. Thus, in contrast to most different areas of intellectual property protected by TRIPS, article 27.3(b) expressly grants Members important discretion to settle on the style within which they're going to shield plant varieties and it contemplates that that discretion could also be exercised otherwise by totally different states.

This discretion and therefore the chance for divergent outcomes it engenders have important consequences. On the one hand, TRIPS' failure to include and hinge upon the antecedent UPOV Acts could have "a deharmonizing result," (Correa 1994a) with states at intervals the UPOV system enacting one form of plant variety protection law and states outside of that system enacting a special law (which could or might not agree every other). This might produce important complexities and uncertainties for plant breeders seeking to promote protected varieties in numerous jurisdictions. On the opposite hand, this sanctioned diversity of legal approaches permits WTO Members to balance the protection of plant breeders' rights against the opposite vital and competitive social group goals known partly I, several of that are found in different international agreements. Seen from this angle, article 27.3(b) provides a way required "safe space" for governments to harmonize conflicting norms and policies - a space that's lacking in different areas of the TRIPS Agreement.

2.4.7. I THE REVIEW OF TRIPS ARTICLE 27.3(B)

The last sentence of article 27.3(b) states that "[t]he provisions of this subparagraph shall be reviewed four years once the date of entry into force of the WTO Agreement." Inasmuch because the WTO Agreement entered into force on 1 Jan 1995, the review contemplated by this text ought to be conducted in 1999. The review was commenced however wasn't finished, mostly as results of disputes between industrial and developing nations over the scope of the review method.⁵⁵ Governments submitted extra info and proposals to the TRIPS Council in 2000 and 2001, however no formal action was taken. With the launching of the Doha round of trade talks in November 2001, however, the review of article 27.3(b) recommenced in earnest.

⁵⁵GRAIN, 2000, pp. 3-5

In June 2002, eleven developing states submitted an in depth proposal to amend TRIPS to "prevent systematic conflicts with the CBD arising from the implementation of TRIPS." The proposal seeks to compel all WTO Members to need candidates for patents with reference to biological materials and content to disclose bound info as a condition of getting legal protection.

The European Communities and Switzerland tried and true the developing states' proposal with a compromise. The EU response incorporate the negotiation of "a self-standing revealing demand," which, whereas not functioning as a replacement eligibility criterion for patent protection, "would enable Members to stay track, at [the] world level, of all patent applications with respect to genetic resources that they need granted access." In June 2003, developing countries rejected this compromise and "reaffirm[ed] and strengthen[ed] their demand for a robust revealing of origin mechanism" at intervals trips that may need "not solely elaborate info regarding WHO provided the [genetic] materials or the [traditional] information used [in patent applications], however additionally positive proof of profitsharing and of previous consent." African countries additionally projected a replacement "Decision on ancient Knowledge" to be incorporated into trips.

2.4.7. J "TRIPS PLUS" BILATERAL AND REGIONAL AGREEMENTS

In the decade since TRIPS was initial adopted, the United States and therefore the European Union have negotiated a growing range of bilateral and regional trade and investment treaties with developing countries. Several of those treaties contain provisions regarding IPRs. Commentators have brought up these treaties by the appellative "TRIPs plus" as a result of they (1) contain intellectual property protection standards additional tight than those found in TRIPS, (2) obligate developing countries to implement TRIPS before the tip of its fixed transition periods or (3) need such countries to accede to or adapt to the necessities of different four-party intellectual property agreements,⁵⁶ joined study recently noted, "[t]o the extent that ["TRIPs plus" treaties] embrace these extra aspects, they're pushing harmonization forward at a pace that's

⁵⁶ GRAIN, 2001; Vivas, 2003

bigger than is seemingly doable at intervals the framework of the WTO." additionally, once a developing state enacts this higher level of IPR protection in its national laws, TRIPS' MFN clause obligates that state to increase a similar protection to any or all different WTO Members. During this approach, bilateral agreements will be wont to ratchet up the extent of protection for IPRs on the far side what's needed within the trips Agreement.⁵⁷

Several "TRIPs plus" treaties contain provisions with reference to plant variety protection that transcend the minimum level of intellectual property protection per trips. as an example, the recently finished U.S.-Central America free trade Agreement (applicable to Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and possibly to the Dominican Republic), the 2002 U.S.-Chile free trade agreement, the 2000 U.S.-Jordan free trade agreement and therefore the 2000 EU-Mexico free trade agreement, additionally as certain Euro-Mediterranean Association agreements and therefore the draft free trade Agreement of the Americas, all mandate UPOV because the acceptable mechanism to safeguard plant breeders' rights. The treaties additionally need these countries to validate the 1991 UPOV Act at intervals fixed time frames.⁵⁸Such obligations limit the discretion enjoyed by these countries to tailor their national laws to attain policy objectives in tension with IPRs.

2.4.7. K PATENT PROTECTION FOR PLANT VARIETIES BENEATH TRIPS

The visits Agreement mandates its signatories to produce patent protection for any inventions all told fields of technology, providing the inventions are "new, involve a resourceful step and are capable of industrial application." (art. 27(1)) but, with respect to plant-related inventions, trips permits Members to exclude from patentability altogether "plants," "essentially biological processes for the assembly of plants" and "plant varieties." (art. 27.3(b)) Thus, as presently written, the trips Agreement would allow WTO Members to say no to safeguard plant varieties with a patent

⁵⁷Drahos, 2001, pp. 794-807.

⁵⁸GRAIN, 2004b; OECD, 2003, pp. 118 and 119

2.4.7. L RELEVANCY OF PATENT PROTECTION FOR PLANT VARIETIES

For this reason, it should ab initio seem that governments will ignore patents as they contemplate the way to shield plant-related innovations in their national legal systems. Still, a basic understanding of the patent provisions of the TRIPS Agreement and a comparison of these provisions with the plant breeders' rights approach contained within the UPOV Acts is crucial for a variety of reasons.

First, extending patent protection to plant-related inventions and innovations remains a possibility for national governments. Recall that TRIPS' "minimum standards" framework expressly contemplates that World Trade Organization Members could offer bigger protection for IPRs than are mandated by the Agreement. Article 27.3(b) specifically invites Members to safeguard plant varieties with patents or with a mix of patents and a sui generis system. A variety of governments within the industrial world, together with the U.S., Japan, Australia, New Zealand, Sverige and therefore the UK, have capitalized on this chance by allowing plant breeders to get patent protection in new varieties providing the eligibility necessities for a patent are met.⁵⁹

Second, as a result of TRIPS doesn't need any patent protection for plant-related innovations, it follows as a matter of fact that the treaty doesn't compel World Trade Organization Members to adopt any explicit kind of patent protection. This enables governments the choice of together with plant varieties at intervals their existing utility patent statutes and/or of enacting a separate statute applicable completely to plants. (Utility patents are usually granted to "any new and helpful method, machine, manufacture or composition of matter, or any new and helpful improvement thence... "In creating this call, however, it'll be helpful for governments to grasp the standard parts of law and therefore the ways that within which they will be varied at intervals the ambit of the TRIPS Agreement. The U.S., as an example, has enacted multiple plant variety

⁵⁹Watal, 2000, p. 149

protection laws. it had been one in every of the primary nations to adopt, within the Plant Patent Act of 1930, a singular kind of protection applicable to asexually reproducing plants. Additionally, since the middle Eighties, U.S. courts and therefore the U.S. Patent and Trademark workplace have finished that plant breeders can also request commonplace utility patents beneath the U.S. Patent Act. In December 2001, the U.S. Supreme Court confirmed that breeders might apply for each styles of protection with relation to a similar variety.⁶⁰ Such a result's prohibited by the 1978 UPOV Act however allowable beneath the 1991 Act to that the U.S. is a party.

Third, an understanding of patent principles is additionally necessary as a result of the problem in some nations of characteristic between plant varieties (which square measure typically excluded from national or regional patent laws) and different plant-related innovations (to that patent protection could also be extended). In Europe, as an example, article 53(b) of the European Patent Convention prohibits the patenting of "plant varieties" per se. still, the European recently confirmed that claims to patent protection that are loosely drawn to embrace "plants" or an invention broader than one variety could also be proprietary, although such claims could embrace multiple varieties. As a result, it should be doable for plant breeders in Europe to fashion their claims to receive actual patent protection for brand new plant varieties. there are important variations in approach between plant breeders' rights and patents. within the case of plant breeders' rights, the eligibility necessities for cover don't seem to be heavy, however the scope of protection granted is kind of slim, each in terms of exclusive rights and therefore the numerous exceptions and limitations to those rights. Patent laws strike a awfully totally different balance. Eligibility necessities are high and tough to satisfy, however once granted a patent conveys broad rights to exclude third parties from exploiting the proprietary invention. betting on the requirements and level of development of plant breeder industries at intervals its territory, a government could decide that either or each styles of protection can offer the suitable incentives to encourage plant-related analysis and innovation.

⁶⁰J.E.M. atomic number 47 offer v. Pioneer Hi-Bred, 122 S. Ct. 593, 2001.

Fifth, and eventually, a review of the TRIPS Agreement's plant-related patent rules can before long occur within the context of the Doha round of trade negotiations. Such a review could manufacture an agreement to amend TRIPS to need World Trade Organization Members to increase patent protection to plant-related innovations or plant varieties. National governments that have to date eschewed patent protection would then have to be compelled to revise their national laws to form such protection offered, additionally to or rather than the legal protection provided beneath national plant variety protection laws. At a minimum, therefore, governments curious about promoting plant-related innovations ought to be apprised of the relevant legal problems in order that they will contribute in an up on thanks to the future discussions.

2.4.7. M SUBJECT MATTER ELIGIBILITY REQUIREMENTS

According to the text of the TRIPS Agreement and authoritative comment interpreting it, plant-related innovations could also be proprietary if "they are" inventions" that are novel, non-obvious and helpful. (TRIPS, art. 27(1));⁶¹ though commentators often assert that these accumulative necessities impose important barriers to the patenting of plant varieties, in apply breeders have succeeded in patenting not solely new varieties, however additionally hybrid plants and inbred and hybrid plant lines.⁶² As 2 commentators recently noted, since 1985 the U.S. Patent and Trademark workplace "has granted many utility patents on all aspects of innovation with reference to plant science: plants themselves, seeds, breeding ways and plant biotechnology."⁶³

2.4.7. N INVENTIONS

The TRIPS Agreement doesn't outline the term "invention," therefore effort its precise desiring to national patent laws or regional patent rules like those in operation at intervals the European Union.

All such laws acknowledge that an invention should be over a mere discovery of a phenomenon or present substance. Thus, as an example, a breeder UN

⁶¹Leskien & Flitner, 1997, p. 7

⁶²Correa, 2000, p. 183

⁶³Janis & Kesan, 2001a, p. 981

agency just known the existence of an antecedent unknown wild variety or a cultivated landrace that was famed solely to an isolated autochthonic community mustn't be allowable to patent that variety or landrace.

The trend among the industrial countries, however, and within the U. S., Japan and therefore the countries of the European Union specifically, is to acknowledge that an isolated and sublimate kind of a natural substance could also be proprietary.⁶⁴ As an example, article 3.2 of the 1998 Directive on the Legal Protection of Biotechnological Inventions states that "biological material that is isolated from its natural setting or made by suggests that of a technical process" could also be patentable. maybe as a result of this approach involves creating awfully fine distinction between discoveries and inventions, several developing countries have declined to follow it, instead selecting to deny patent protection to plant materials found in nature even though they need been isolated or sublimate by human intervention.⁶⁵ In keeping with one comment, this patent ban is compatible with the trips Agreement providing it doesn't reach plants with changed or artificial plant gene sequences, which frequently considerably vary from present substances and therefore are properly classified as inventions.⁶⁶

A second attribute of a patentable invention is that an applier seeking such a patent should disclose the invention in an exceedingly sufficiently clear and complete manner that allows someone hot within the art to hold out the invention. (TRIPs, art. 29(1)). Additionally to making sure that the claimed invention in reality meets patent eligibility necessities, revealing additionally permits third parties to access the invention for functions of rising it or developing new inventions. Within the case of plant-related innovations, national laws allow inventors to satisfy the revealing demand either by a written description of the invention and/or by a deposit of the protected material (i.e. seeds, germplasm or different biological material). TRIPs don't need national governments to adopt any explicit kind of revealing, nor will it

⁶⁴Correa, 2000, pp. 177 and 178; Leskien&Flitner, 1997, p. 8

⁶⁵Correa, 2000, p. 186; Watal, 2000, pp. 155 and 156

⁶⁶Leskien&Flitner, 1997, p. 9

specify the temporal arrangement, manner or conditions of third party access. As a result, national laws vary wide on this time.⁶⁷

2.4.7. O NOVELTY, INGENIOUS STEP AND INDUSTRIAL APPLICATION.

These 3 accumulative eligibility necessities are mandated by article 27(1) of the TRIPS Agreement and are found all told national patent laws. Even among states with robust patent protection laws, however, the interpretation and application of every of those steps varies significantly.

Novelty. The principal objective of the novelty demand is to make sure that the claimed invention can't be found within the "state of the art" or "prior art" already breathing. These terms consult with the body of data that is out there to the general public before the date of filing of an application for patent protection. Patent examiners establish each the novelty and ingenious step necessities by examination the claimed invention to the state of the art or previous art. An important issue for plant-related innovations issues the shape within which previous art exists and therefore the problem of accessing content as previous art.

Under U.S. law, as an example, novelty will be negated if "the invention was proprietary or delineated in an exceedingly written publication during this or a far off country or publicly use or on sale during this country... "(The vital purpose is description: foreign uses of claimed inventions don't seem to be thought-about as a part of previous art. The Patent Cooperation treaty (PCT) adopts the same approach, limiting previous art to "everything that has been created offered to the general public anyplace within the world by suggests that of written revealing." therefore, within the u. s. and in countries following the proportion, even wherever foreign plant-related innovations are famed, used or disclosed in apart from written kind, it should be doable for the creator to get patent protection.⁶⁸

⁶⁷Correa, 2000,,p. 191

⁶⁸Correa, 2000, pp. 188 and 189; Dutfield, 2000, pp. 64 and 68

Article 54(2) of the European Patent Convention adopts a special approach, process the state of the art to embrace everything created offered to the general public by suggests that of written or oral descriptions, by use or so in the other approach, before the filing of the applying. still, the absence of general databases regarding content, together with information with reference to plants, has led examiners in numerous countries to grant patents for inventions that were later revoked once they were discovered to embrace previous art.

Inventive step. The creative step demand appearance to the state of the art to work out whether or not the claimed invention isn't obvious to an individual delicate within the art. though the bulk of international treaties and national laws outlined creative step during this manner, the appliance of the quality to plant-related innovations varies and should be a big hurdle to patent protection given "the monumental speed of technological progress" within the field.⁶⁹

Industrial application. The economic application demand is bothered with AN invention's sensible utility, and specifically whether or not "it may be created or utilized in any quite business, as well as agriculture." (E.g. European Patent Convention, art. 7) This eligibility demand doesn't seem to create a big obstacle to the patenting of recent plant varieties, given their prepared use within the fields of plant breeding, gardening and agriculture.

2.4.7. P EXCLUSIONS FROM PATENTABILITY

As noted higher than, article 27.3(b) of journeys permits World Trade Organization Members to deny all patent protection to "plants" and "plant varieties." even so, a state that chooses to supply such protection might even so prefer to exclude from patentability a narrower class of inventions, "the interference inside their territory of the business exploitation of that is important to guard ordre public or morality, as well as to guard... flowers or health or to avoid serious prejudice to the setting." (Art. 27(2)) Some commentators have declared that this language grants states the discretion to exclude broad classes of inventions that additional the erosion of genetic diversity on the speculation that problems with public policy and morality

⁶⁹Leskien&Flitner, 1997, p. 13

embrace a state's sovereign right to manage its natural resources. but, as a result of World Trade Organization dispute settlement panels have strictly understood clauses within the WTO Agreements that let states to belittle from protected plant rights, the additional persuasive read is that exclusions on this basis should be fact-specific, narrowly drawn and no broader than needed to realize their purpose. (Moufang, 1998) Resolution of this discussion within the context of plant-related innovations won't occur till the WTO dispute settlement bodies issue a ruling on the matter, an unlikely prospect see you later as Members are liberal to exclude plants and plant varieties entirely from patentability.

2.4.7. Q EXCLUSIVE RIGHTS

Once a patent is awarded, the owner of the proprietary product or method enjoys a broad array of exclusive rights. These embrace the proper to forestall third parties from creating the merchandise, victimization the method or from victimization, providing purchasable, commerce or commercialism for those functions the proprietary product or the merchandise obtained by the proprietary method. (TRIPs, art. 28) States that prefer to extend patent protection to plant-related innovations would therefore be expected to guard merchandise composed of plants and components of plants and processes (including biological processes) for the assembly of plants.⁷⁰ though there's some dispute over whether or not ancient plant breeding ways (as hostile making varieties through genetic manipulation) may be protected by method patents, the observe of states that do extend patent protection to plants reveals that such ways are protected)

2.4.7. R TERM OF PROTECTION

TRIPs article 33 imposes a minimum 20-year term of protection from the date the patent application is filed.

2.4.7. S EXCEPTIONS AND LIMITATIONS

⁷⁰Leskien&Flitner, 1997, p. 22

As compared to limitations on plant breeders' rights permissible beneath the UPOV, the restrictions on a patent owner's exclusive rights permissible beneath the TRIPS Agreement are so much narrower. These limitations may be divided into exceptions to exclusive rights and obligatory licenses, which allow bound uses by third parties however need remuneration to the patent owner.

Exceptions.

Article 30 of TRIPS permits WTO Members to adopt "limited exceptions" to exclusive patent rights as long as they are doing not "unreasonably conflict with a traditional exploitation of the patent" and "do not immoderately prejudice the legitimate interests of the patent owner, taking account of the legitimate interests of third parties." This three-part test is applicable to all or any patents protected by the TRIPS Agreement.

2.4.7. T CANADIAN PATENTS CASE

A WTO dispute settlement panel processed the which means of article 30 in North American country - Patent Protection of Pharmaceutical merchandise (Generic Medicines). The panel thought-about a criticism brought by the European Communities to 2 provisions of Canadian law. The primary permissible uses of proprietary prescribed drugs while not the patentee's authorization for the aim of getting approval of a generic product before the patent's term terminated. The second permissible production and reposition of the generic product for unharnessed forthwith when the expiration of the patent. Each procedures were designed to allow the selling of generic versions of prescribed drugs promptly when the expiration of the patent. The panel call confirmed that solely the primary exception is in line with TRIPS. Additionally, the panel all over that any exception that leads to "a substantial curtailment" of the patent owner's exclusive rights is inconsistent with article 30.

If TRIPS were amended to need patent protection for new plant varieties, the quality adopted by the Canadian Patents panel would preclude Members from enacting several of the exceptions that area unit permissible beneath plant

variety protection laws, like the breeders' exemption and therefore the farmers' privilege. An equivalent prohibition on these privileges already exists in many countries that presently shield plant varieties and different plant-related innovations in their national patent laws.

2.4.7. U RESEARCH AND EXPERIMENTATION EXCEPTION

Most national patent laws allow third parties to interact in experimentation or analysis associated with the proprietary invention. Some states, however, as well as us, narrowly understand this exception to preclude unauthorized development of any merchandise or processes that result from such analysis if they include the patentable invention. In such countries, business activities permissible beneath the breeders' exemption found in plant variety protection laws are prohibited wherever the variability is protected by a patent. Thus, as an example, a breeder wouldn't be permissible to cross proprietary seeds to provide improved varieties.⁷¹ Even in patent systems during which the experimental use exception tolerates some development (Cornish, 1998), like those found in Europe, it's probably that the business acts allowed beneath a conventional breeders' exemption would "conflict with a traditional exploitation of the patent" and would therefore quantity "a substantial curtailment" of his or her exclusive rights in violation of trips article 30. Thus, if patent protection of plant varieties were to become necessary beneath trips, a breeders' exemption like that found in article 22,V of Mexico's law would be unlikely to survive a challenge before a WTO dispute settlement panel.

2.4.7. V FARMERS' PRIVILEGE

An analogous fate is probably going to befall the exception allowing farmers to avoid wasting and apply seeds on their own land while not the patent owner's permission, another exception historically allowed beneath plant selection protection laws. US don't acknowledges a farmers' privilege beneath its utility patent laws. though such an exception has been adopted in article 11 of the European Union's 1998 Biotechnology Directive (conditioned upon the

⁷¹Correa, 2000, p. 192

payment of even handed remuneration except by tiny farmers), a minimum of one commentator has questioned whether or not that exception is compatible with trips article 30, as a result of such AN exception would immoderately prejudice the "legitimate interests" of the patent owner.⁷²

2.4.7. W COMPULSORY LICENCES

TRIPS contains a posh set of rules that regulate once states might compel patent owners to license their merchandise and processes to governments or to non-public parties. though the trips Agreement doesn't specify the grounds that justify the creation of obligatory licences⁷³, as a result of article 5A(2) of the Paris Convention is incorporated by reference into article 2(1) of trips, it may be inferred that such licences could also be granted solely to forestall "abuses which could result from the exercise of the [patent owner's] exclusive rights." Even wherever such abuses exist, trips article thirty one imposes additional conditions upon the granting of obligatory licences, as well as individual thought of every case, previous negotiations with the patent owner seeking a voluntary licence, limitations on the scope and length of obligatory licences and requiring their termination once the circumstances resulting in their creation are not any longer in result. Most significantly, patent owners should receive "adequate remuneration," taking into consideration the worth of the rights commissioned.

One space during which obligatory licences might have an effect on plant breeders is that of dependent patents, that are outlined as patents whose use needs the authorization of an earlier patent owner. Such patents are rife in plant breeding, wherever the creation of recent varieties usually happens incrementally within the kind of variations and enhancements of existing varieties, as hostile radically new innovations.⁷⁴ as a result of progressive innovation usually needs access to protected varieties, governments might get to impose obligatory licences in favour of third party breeders WHO are unable to barter voluntary access to proprietary plant varieties. However, the compatibility of such licences with trips is untested and governments seeking

⁷²Watal, 2000, p. 155 n.62

⁷³Gervais 1998, p. 165

⁷⁴Correa, 2000, p. 194

to impose them ought to make sure that they obey conscientiously with every of the numerous needs set forth in article 31.

Because the patent obligatory licence provisions of trips are way more elaborated and narrow than the obligatory licences permissible beneath the 1978 and 1991 UPOV Acts, commentators are divided over their quality within the space of plant-related innovations. Some argue that such licences are going to be mostly orthogonal to the sector⁷⁵, whereas others claim that governments might adopt such licences "to guarantee access to proprietary materials so as to achieve specific agricultural objectives (e.g. accessibility of a given material for farmers) or food security..."⁷⁶even though licences to realize these objectives are permissible, however, the restrictions that trips imposes considerably limit the power of WTO Members to grant such licences in favour of third parties.

2.5 THE ROAD TO THE UPOV

The International Union for the Protection of recent types of Plants or UPOV (French: *Union internationale pour la protection des obtentions végétales*) is an intergovernmental organization with headquarters in Geneva, Switzerland. this Secretary-General of UPOV is Francis Gurry.

UPOV was established by the International Convention for the Protection of recent types of Plants. The Convention was adopted in Paris in 1961 and revised in 1972, 1978 and 1991. The target of the Convention is that the protection of recent types of plants by associate intellectual property right. By codifying material possession for plant breeders, UPOV aims to encourage the event of recent types of plants for the advantage of society.

For plant breeders' rights to be granted, the new selection should meet four criteria underneath the foundations established by UPOV:

The new plant should be novel, which suggests that it should not are antecedent marketed within the country wherever rights area unit applied for.

⁷⁵Leskien&Flitner, 1997, p. 25

⁷⁶Correa, 2000, p. 194.

The new plant should be distinct from different out there varieties. The plants should show homogeneity. The attribute or traits distinctive to the new selection should be stable in order that the plant remains faithful kind once continual cycles of propagation.

Protection is obtained for a brand new plant selection (legally defined) but it's been obtained, e.g. through typical breeding techniques or recombinant DNA technology.

The Convention defines both how the organization must be governed and run, and the basic concepts of plant variety protection that must be included in the domestic laws of the members of the Union. These concepts include:

- i) The criteria for new varieties to be protected: novelty, distinctness, uniformity, and stability.
- ii) The process for application for a grant.
- iii) Intellectual property rights conferred to an approved breeder.
- iv) Exceptions to the rights conferred to the breeder.
- v) Required duration of breeder's right.
- vi) Events in which a breeder's rights must be declared null and void.

In order to be granted breeder's rights, the variety in question must be shown to be new. This means that the plant variety cannot have previously been available for more than one year in the applicant's country or for more than four years in any other country or territory. The variety must also be distinct (D), that is, easily distinguishable through certain characteristics from any other known variety (protected or otherwise). The other two criteria, uniformity (U) and stability (S), mean that individual plants of the new variety must show no more variation in the relevant characteristics than one would naturally expect to see, and that future generations of the variety through various propagation means must continue to show the relevant distinguishing characteristics. The UPOV offers general guidelines for DUS testing.

A breeder can apply for rights for a new variety in any union member country, and can file in as many countries as desired without waiting for a result from previous applications. Protection only applies in the country in which it was

granted, so there are no reciprocal protections unless otherwise agreed by the countries in question. There is a right of priority, and the application date of the first application filed in any country is the date used in determining priority.

The rights conferred to the breeder are similar to those of copyright in the United States, in that they protect both the breeder's financial interests in the variety and his recognition for achievement and labour in the breeding process. The breeder must authorize any actions taken in propagating the new variety, including selling and marketing, importing and exporting, keeping stock of, and reproducing. This means that the breeder can, for example, require a licensing fee for any company interested in reproducing his variety for sale. The breeder also has the right to name the new variety, based on certain guidelines that prevent the name from being deliberately misleading or too similar to another variety's name.

There are explicit exceptions to the rights of the breeder, known as the "breeder's exemption clause", that make it unnecessary to receive authorization for the use of a protected variety where those rights interfere in the use of the variety for a private individual's non-monetary benefit, or the use of the variety for further research. For example, the breeder's rights do not cover the use of the variety for subsistence farming, though they do cover the use of the variety for cash crop farming. Additionally, the breeder's authorization is not required to use a protected variety for experimental purposes, or for breeding other varieties, as long as the new varieties are not "essentially derivative" of the protected variety.

The Convention specifies that the breeder's right must be granted for at least 20 years from grant date, except in the case of varieties of trees or vines, in which case the duration must be at least 25 years.

Finally, there are provisions for how to negate granted breeders' rights if the rights are determined to be unfounded. That is, if it is discovered after the application has been granted that the variety is not actually novel or distinct, or if it is discovered to not be uniform or stable, the breeder's rights are nullified. In addition, if it is discovered that the person who applied for protection of the

variety is not the actual breeder, the rights are nullified unless they can be transferred to the proper person. If it is discovered after a period of protection that the variety is no longer uniform and stable, the breeder's rights are cancelled.

The UPOV has been updated several times to reflect changing technology and increased understanding of how plant variety intellectual property protection must work. The last revision was in 1991, and specifically mentioned genetic engineering only insofar as it is a method of creating variation. Under the UPOV Convention alone, genetically modified crops and the intellectual property rights granted to them are no different from the intellectual property rights granted for traditionally bred varieties. It is important to note that this necessarily includes the ability to use protected varieties for subsistence farming and for research.

In October 2004, two joint Symposia were held in Geneva with the World Intellectual Property Organization (WIPO). These Symposia were the WIPO-UPOV Symposium on Intellectual Property Rights in Plant Biotechnology (24 October 2003) and the WIPO-UPOV Symposium on the Co-Existence of Patents and Plant Breeders' Rights in the Promotion of Biotechnological Developments (25 October 2003). No new policy was created at either of these events, but a consensus emerged that both patents and plant-breeders' rights must combine to promote plant biotechnology.

As a policy matter, the UPOV is known to consider open and un-restricted access to the genetic resources of protected plant varieties to be important to the continued development of new varieties. This opinion is indicated in the "breeders' exemption" clause of the Convention, as described above, and was reinforced in October 2005 in a reply to a notification from the Convention on Biological Diversity.

In April 2003, the Convention on Biological Diversity asked the UPOV for comment on the use of Genetic Use Restriction Technologies (also known pejoratively as 'terminator genes') as they relate to the promotion of intellectual property rights. In the summary of their response, the UPOV stated that intellectual property protection is necessary because breeders must have

the ability to recoup their money and labour investment in creating new varieties, and in that light, plants with 'terminator genes' may still be accepted for protection if they meet the other criteria. However, the UPOV comment states that the Convention and its system of protection is sufficient to protect intellectual property rights, and that with proper legal protections in place, technologies like 'terminator genes' should not be necessary.

As with other categories of intellectual property, a key role in the inclusion of agriculture innovations within the international regulatory regime was played by industry associations. The Congrès Pomologique de France, held in 1911, had called for special protection for plant varieties. This agitation continued in the 1920s and 1930s, culminating in the foundation in Amsterdam on 17 November 1938, of the International Association of Plant Breeders for the Protection of Plant Varieties (ASSINEL). At its simmering Congress in June 1956 a resolution of ASSINEL called for an international Conference to promulgate an international system for the protection of plant varieties.

2.6. THE PARIS CONFERENCE ON SPECIAL PROTECTION OF 1957 AND 1961

On 22 February 1957, the French Government issued invitations to 12 Western European Countries to attend a diplomatic conference in Paris Conference from May 7 to 11, 1957 to consider establishing such a system. Participation was restricted by the French those states UN agency were best-known to possess similar concerns thereto on this subject. The conclusions of the 1957 Paris Conference were set down in its Final Act, adopted in May 1957. This recognized the legitimacy of breeders' rights and established because the preconditions for defence that a variety had to be distinct from pre-existing varieties and sufficiently solid and stable in its essential characteristics. The act outlined the rights of the stock breeder and acknowledged the principle of the independence of protection. At the second session of the conference, command in Paris in late 1961, the International Convention of recent types of Plants, or Union pour la Protection des Obtentions Ve'getales (UPOV) was adopted.

Article 4 (1) applied the draft UPOV Convention to ‘all botanical genera and species’, however it had been envisaged that the Convention would have a gradual introduction. a listing of 13 genera was annexed to the Convention: wheat, barley, oats or rice, maize, potato, beans, Lucerne, red clover, ryegrass, lettuce, apples, roses or carnations. Art.4 (3) needed every Member State on entry in to force of the Convention to use it to a minimum of 5 genera from this list and, at intervals 8 years, to all the listed genera.

2.7 PLANT VARIETY PROTECTION AND THE TRIPS AGREEMENT 1994

Probably the foremost disreputable demand of the journeys Agreement is that in Art.27.3 (b), which needs that Member ‘shall give for the protection of plant varieties either by patents or by an efficient ‘sui-generis system or by any combination thence.’ Art 8 of Agreement, in enunciating the principles that area unit to animate it, provides that ‘consistent with the provisions of the Agreement’; signatories could ‘adopt measures necessary to guard public health and nutrition, and to promote the general public interest in sectors of important importance to their socio-economic and technological development. It would not be too troublesome to construct an argument that the obligation to protect plant varieties would possibly to be inconsistent with a given nation’s would like for food security. However, the gap words of Art.8 counsel that just in case of a conflict between these provisions, the obligations within the Agreement, like Art.27.3 (b), area unit overriding (Intellectual Property, ancient knowledge and Genetic Resources).

2.8. PLANT VARIETY PROTECTION

PVP offers the stock breeder exclusive rights to a brand new and distinct plant varieties in order that the will exploit the breeder is defined by the 1991 UPOV (International Union for the Protection of recent types of Plants) Convention because the person who bred, or discovered, and developed a range. Therefore, protection isn't restricted to breeders UN agency turn our varieties as a result of crossing g parent plant and choosing from offspring. The term stock breeder conjointly includes an individual UN agency discovers

a mutation and converts that discovery in to a cultivated selection by a method of selective propagation. Discovery itself, however, doesn't represent breeding. The PVP Act of U.S.A, enacted in Dec 1970 and amended in 1994, provides legal IP Rights Protection to developers of recent types of plants that area unit sexually reproduced (by seed) or are tuber propagated. Bacterium and fungi area unit excluded. The PVP Act is administered by the US Department of Agriculture (USDA). A certificate of protection is awarded to associate degree owner of varieties once associate degree examination shows that the range is new and distinct from different varieties and is genetically uniform and stable through successive generation. The term of protection is 20 years, for many crop and 25 years for trees, shrubs, and vines.

2.9 PLANT BREEDERS RIGHTS (PBR)

PBR could be a patent-like system that permits the plant selection owner to prohibits specific unauthorized uses of the range. PBR apply solely to plants, and thence are among the category of sui generis system, that's special purpose systems. PBR, like patents and different types of ip law are form of national legislation. That is, protection applies solely in countries wherever protection has been sought-after and PBR granted beneath the TRIPS Agreement signatories of WTO (Currently regarding 150) area unit commercial to go with the trips needs of a harmonized minimum level of scientific discipline rights protection. Although the journeys text is quite exhaustive in most regards, only a single sentence refers to PBR. Article 27.3 (b) reads partly, that WTO members should give plant selection patents, 'an effective sui-generis system'. Most countries new to protective plants are choosing PBR over patents.

Maharashtra Hybrid Seed Co and Anr v. Union of India and Anr,

Framework of the Act

According to the Preamble of the Act, it's "an Act to provide for the institution of an efficient system for defence of plant varieties, the rights of farmers and plant breeders and to encourage the event of latest kinds of plants". The Act was enacted pursuant to India's ratification of the Agreement on Trade related Aspects of intellectual property Rights (TRIPS Agreement). Sub paragraph (b)

of paragraph 3 of Article 27 in part II of the TRIPS Agreement enjoins the members to supply protection of plant varieties either by patents or by an efficient sui generis system or by any combination thereof.

Section 13 of the Act provides for maintenance of a register referred to as the national register of plant varieties, which is able to record the names of all registered plant varieties alongside names and addresses of their respective breeders and their rights in respect of such plant varieties. If the application for registration of an “essentially derived variety” or a “variety” is accepted and also the said plant variety is registered, the Registrar is enjoined to issue a certificate of registration under Section 23(8) of the Act (in case of essentially derived variety) and Section 24 of the Act (in case of variety). By virtue of Section 24(6), the registration certificate is valid for a period of nine years just {in case} of trees and vines and six years in case of different crops. The registration is renewable for any periods. the total period of validity cannot, however, exceed:

“(i) in the case of trees and vines, eighteen years from the date of registration of the variety;

(ii) in the case of extant varieties, fifteen years from the date of the notification of that variety by the Central Government under section 5 of the Seeds Act, 1966 (54 of 1966); and

(iii) in the other cases, fifteen years from the date of registration of the variety.”

A certificate of registration under the Act confers an exclusive right on the breeder or his successor, agent or licensee to provide, sell, market, distribute, import or export the variety (vide Section 28(1) of the Act).

Background

The petitioners impugned a typical order dated 24.05.2012 given by the Registrar, Protection of Plant Varieties and Farmers’ Rights Authority, that control that parent lines of famous hybrid varieties cannot be registered as “new” plant varieties under the Act. It absolutely was control that if the

hybrid falls under the category of “extant variety” regarding that there's common knowledge, then its parental lines cannot be treated as novel.

It was not at issue that parent lines are plant varieties at intervals which means of Section 2(za) of the Act. If the aforementioned varieties are found compliant with the conditions under Section 15 of the Act, they are registerable under the Act.

Technical aspects:

A hybrid variety is made by crossing two parent varieties. basically, the method involves manufacturing one parent line ('A' line) that is male sterile and female fertile. The spore of the opposite parent line, called the refinisher line ('R' line), is dusted on the stigma of 'A' line. The resultant seed harvested from 'A' line may be a hybrid between the two parent lines, 'A' line and 'R' line and its genome includes of the genomes of the same two parent lines. Within the strict sense the seeds are harvested from 'A' line and not from 'R' line.

Issue:

Whether sale or disposal of hybrid seeds can amount to sale or otherwise disposal of the “propagating or harvested material” of the parent lines and consequently destroy their novelty under Section 15(3) (a) of the Act?

Relevant provision

“15. Registerable varieties.—

(1) a brand new variety shall be registered under this Act if it conforms to the criteria of novelty, distinctiveness, uniformity and stability.

(2) even so something contained in sub-section (1), an surviving variety shall be registered under this Act inside a such amount if it conforms to such criteria of distinctiveness, uniformity and stability as shall be such under the laws.

(3) For the needs of sub-sections (1) and (2) because the case is also, a brand new variety shall be deemed to be—

(a) novel, if, at the date of filing of the applying for registration for protection, the propagating or harvested material of such variety has not been sold-out or otherwise disposed of by or with the consent of its breeder or his successor for the needs of exploitation of such variety—

(i) in India, earlier than one year; or

(ii) outside India, within the case of trees or vines previous six years, or, in the other case, previous four years, before the date of filing such application:

Provided that a shot of a brand new variety that has not been sold or otherwise disposed of shall not affect the proper to protection:

Provided more that the actual fact that on the date of filing the application for registration, the propagating or harvested material of such selection has become a matter of general knowledge aside from through the aforementioned manner shall not have an effect on the standards of novelty for such variety;

JUDGMENT

A) whether or not HYBRID SEEDS OBTAINED BY CROSSING PARENT LINES BE “PROPAGATING OR HARVESTED MATERIAL” OF THE PARENTAL LINES

Petitioner: The hybrid seeds, obtained by crossing the parental lines, are distinct in traits and characteristics from the parent lines and can't be thought of as propagating or harvested material of the parental line varieties. it absolutely was contended that the propagating/harvested material of a range can mean any a part of a plant or seed, that is capable of regeneration into a plant having identical characteristics as that of the first plant. Since regeneration of hybrid seed can end in hybrid plant selection that is distinct from the parent line varieties (and not end in the parent lines), the hybrid seeds obtained by crossing of parent lines cannot be same to be “propagating or harvested material” of the parental lines.

Judgment: The expression “harvested material” has not been outlined under the Act, however the expression “propagating material” has been outlined under Section 2(r) of the Act and reads as under:-“(r) “propagating material”

suggests that any plant or its part or half there from as well as an supposed seed or seed that is capable of, or appropriate for, regeneration into a plant;”

A plain reading of the aforementioned definition indicates that an intended seed or a seed that is capable of, or appropriate for, regeneration into a plant are going to be a propagating material of the plant. so as to fall inside the definition of the expression “propagating material” all that's needed is that a seed or supposed seed ought to be capable of, or appropriate for, regeneration into a plant. The word “regeneration” suggests that to germinate or to grow into a plant.

The expression “harvested material of such variety” includes all material that has been harvested from the plant. Consequently, “the seeds area unit harvested from the parent lines; such seeds might not propagate the parental lines, however all the same, are harvested materials of these lines”. The Court, therefore, unemployed the petitioners’ argument viz., a hybrid seed doesn't fall inside the definition of “propagating material” because it is incapable of make any of the parent line varieties.

B) whether or not DEVELOPMENT AND SALE OF HYBRID SEEDS AMOUNTS TO EXPLOITATION OF THE PARENTAL LINES?

Petitioner: it absolutely was submitted that the event and sale of hybrid seeds won't quantity to exploitation of the parental lines. it absolutely was contended that the words “disposed of” as utilized in Section 15(3) of the Act, can't be scan in isolation and cannot embody self-use and got to be scan synonymous to ‘sale’. Further, the word “disposal” contemplates transferring of title from one party to a different party. Within the instant case, the title of parent lines weren't compound with or transferred to 3rd parties. Therefore, the sale of hybrid seeds won't quantity to disposal of parent lines.

Judgment: Sale of the harvested material of types (like the hybrid seed which is able to not germinate into either of the parent varieties) amounts to “exploitation of such variety”. Further, “...admittedly, the petitioners sell and lose hybrid seeds. Since such seeds are command to be propagating

material/harvested material of the parent lines, the parent lines can't be deemed to be novel beneath Section 15(3)(a) of the Act.

C) Impact OF THE EXPRESSION “DEEMED”

Petitioner: pertaining to similar statutes in United States and EU, it absolutely was argued that the aforementioned statutes offer a legal fiction that the parent lines are going to be deemed to be or thought of to be well-known if the hybrid was sold-out or otherwise disposed of. The Act doesn't have an analogous provision. Therefore, the parent lines can't be thought of to be well-known if the hybrid seeds were sold-out.

Judgment: The word “deemed” within the gap sentence of Section 15(3) of the Act should be scan within the context of the legislative intent viz., a plant selection, the propagating material or harvested material of that is sold-out or otherwise disposed of are going to be precluded from being claimed as novel if sold/otherwise disposed of before the required amount. The argument scrutiny the Act and also the EU statutes were therefore negated.

D) APPLICATION OF MISCHIEF RULE

The Court applied the mischief rule of interpretation and command as follows:

“35. In my view, a comprehensible reading of Section 15(3) of the Act would indicate that if the seeds of parent lines are commercially sold-out, the breeders cannot claim the parent lines to be novel. As I see it, even if one was to think about that language of Section 15(3) of the Act was ambiguous on the difficulty, identical would ought to be resolved against the petitioners. this is often thus as a result of its well settled that just in case of ambiguity within the language of a statute, a purposive interpretation that furthers the intention of the legislature should be adopted. The Legislative intent of the Act is to shield the rights of the farmers' and plant breeders. India had sanctioned the trips agreement and, therefore, was obligated to shield the belongings rights in bound plant varieties. The protection as envisaged under the Act is to supply bound exclusive rights for a such amount of time.....In alternative words, the Parliament in its Legislative knowledge thought of that providing exclusivity as such under Section 24(6) of the Act was sufficient protection

to the plant breeders. If the provisions of Section 15(3) of the Act are scanned in a manner as instructed by the petitioners, the impact would be to increase that amount of protection persistently over. Within the initial instance, a stock breeder would get protection in respect of the hybrid variety and assuming that there are two parent lines, the breeder might simply before the end of the Registration Certificate in respect of a hybrid variety, register one in all the parent variety and therefore, extend its amount of exclusivity for an additional amount of 15/18 years as a result of protection of even one parent line would much guarantee exclusive rights in relevancy the hybrid selection. Within the same manner, before end of the registration amount of that parent line, the breeder might register the opposite parent line as a new variety. During this manner a breeder might extend the protection for a amount up to most 45/54 years rather than 15/18 years as contemplated beneath the Act. Clearly, this is often not the legislative intent of the Parliament.”

E) RELIANCE ON ARTICLE 6(1) OF International Union for defence of latest styles of Plants (UPOV) CONVENTION (1991)

Article 6(1) of the 1991 Act of the UPOV Convention contains words that are unit just like Section 15(3) of the Act. The executive and Legal Committee of UPOV had earlier terminated during a similar dispute that the novelty of the parent lines was lost by industrial exploitation of its hybrid.

2.10 SUI-GENERIS SYSTEM

A sui-generis (of its own kind) system of protection could be a special system adapted to particular material, as opposed to protection given by one in all the most systems of intellectual property protection, e.g. the patent or copy right system. A special law for the protection of integrated circuits is an associate degree example of sui-generis law. In this case, it means countries will build their own rules to guard new plant varieties with some variety of IPR on condition that such protection is effective. The Agreement doesn't outline the elements of an effective system. One possible sui-generis system likely to be recognized as effective is the UPOV system of Plant Breeders' Rights (PBRs) this ab initio developed in Europe, has now been adopted by the industrial

countries, and is additionally being adopted by an increasing variety of developing countries. The "effective sui generis system" cited in Article 27.3(b) of the TRIPS Agreement is clearly intended to be an alternate to the legal system. During this association, it is useful to recall that the UPOV system was conjointly established, in 1961, as a special variety of protection, in role of the patent system, covering solely plant varieties and specifically tailored to plant varieties. The importance of Sui-generis system is firstly, the single system presents the chance of an additional option of selecting 'new types of intellectual property rights' that are not essentially based on the existing ones like patents or plant breeder's rights. Second the concept of single protection provides developing countries with the 'conceptual justification' to seem on the far side established categories of IPRs and defend certain classes of inventions accordance with the specificities of the sphere involved and the distinct wants of individual countries. Thirdly, it provides a foundation for integrating intellectual property rights and sustainable development. The scope of protection could be restricted to hide solely the reproductive elements of plants, or may well be extended to include also harvested plant materials. Second, the TRIPS agreement doesn't veto the event of extra protection systems, nor will it veto the protection of additional material to safeguard native information systems and informal innovations similarly on prevent their ineligible appropriation. Many components may well be other, such as community gene funds and also the establishment of mediation procedures (public defender) for the protection of native interests or native registers.

CHAPTER 3

PLANT BREEDERS RIGHTS

INTRODUCTION

The history of plant improvement in India till date has been essentially that of growth and elaboration of publicly performed research and in a virtual vacuum of private investment. Coupled with this there has been a significant resistance among both state managers and bench scientists, to the wholesale reorientation of publicly funded agricultural research along lines dictated by commercial interests. However, today the development of biotechnology has made selling packets of DNA to farmers a most enticing prospect even for firms not historically associated with the seed industry.

The appeal of biotechnology for commercial plant breeding and the seed industry is twofold⁷⁷ at one level, the new genetic technologies promise heretofore unattainable improvements in the agronomic characteristics of Crop varieties and thereby will improve the competitive position of individual firms. At a deeper level, biotechnology offers the prospect of the further elaboration of the twin vectors of commodification along which capital has historically penetrated plant breeding elsewhere in the world.

For invention or creation, we generally find the economic processes involved are separable into three conceptual stages. These stages are often called “invention, innovation and diffusion⁷⁸.”

⁷⁷Kloppenborg Jr Jack Ralph, *First the Seed*, Cambridge University Press, Cambridge, 1990, p.16

⁷⁸ Lesser William, Masson Robert T, *An Economic Analysis of the Plant Variety Protection Act*, American Seed Trade Association, 1983. p 9

Invention⁷⁹ generally absorbs resources - it's indeed one per cent inspiration and ninety nine percent perspiration. To invent requires effort so it is privately and socially costly, absorbing resources before any benefits emerge.

The second concept innovation can generally be thought of as the entrepreneurship and investment which brings an invention from the first evidence that it will work up through the development stage.⁸⁰ The bulk R&D (Research & Development) funding is spent at this stage in the process.

Finally we have the diffusion process. Diffusion starts with the initial commercial (and other) practical use of the product, practical or creation. It may represent the expansion of the marketing and/or uses for the innovation, whether by the initial innovator (or "assignees", i.e., licensees or purchasers of its patent) or by imitators.

As we conceptualise each stage of this process it is obvious that they each generally carry with them some form of resource investment. This of course implies that each is dependent upon some form of incentive. Also, for every initial idea there are several which never reach the stage of invention; for each which is invented, many will never be innovated, and for each which is innovated, many will never diffuse widely.⁸¹ Furthermore, the economic factors may vary widely throughout this process. Often it is not the inventor who plays the innovation role, which frequently evolves from entrepreneurs, backed by capital from investors, using the services of engineers and others.

In the absence of patents or other forms of social control, inventions and innovations have poorly defined property rights. Without patents, for many inventions it would have been quite difficult for inventors and innovators to recoup their investments, let alone earn a positive return. Without patents, a lack of appropriability of the financial rewards from an innovation could lead to underinvestment of resources in R & D for technical change. For obvious

⁷⁹Jewkes John, Sawers David, Süllerman Richard, *The Source of Invention*, Norton, New York, 1969, p28

⁸⁰Scherer F.M., *Industrial Market Structure and Economic Performance*, Rand McNally, Chicago, 1980, p.411

⁸¹Dr. R. Mashelkar, Director General, CSIR Government of India.

and time-h counteract such underinvestment through various social controls that protect an inventor's or innovator's property right.

It is in this manner that patents and copyrights, or the lack thereof, can play a crucial role. Copyright laws have played a vital role in bringing investment into the music and film industry in India (or vice versa). It is therefore high time that we realise the need to commercialise agricultural research. The least we can do towards achieving this goal is to enact laws granting PLANT BREEDERS' RIGHTS.

3.1 A LIST OF PLAN BREEDERS RIGHTS

Just as in the case of farmers' rights, breeders' rights must be specified delimited and clear. Only then would a breeder be able to exercise his rights.

Breeders' rights should comprise of the following:

- i. The breeder has the exclusive right to offer for sale and sell plants of the variety protected.
- ii. The breeder has the exclusive right to license other persons to sell reproductive material of the plants of the variety protected.
- iii. The breeders has the exclusive right to produce and as well authorise and licence the production for the purposes of commercial marketing of the reproductive or vegetative propagating material or the plant itself.

(A) THE BREEDER HAS THE EXCLUSIVE RIGHT TO OFFER FOR SALE AND SELL PLANTS OF THE VARIETY PROTECTED

This is especially necessary the case of ornamental flower plants and certain fruit trees like coconut, areca nut etc. The breeder after all has long term investments in plant breeding and so he is the owner of this right. Of course that implies that he also has the right to assign, transfer or license the same to whomsoever he chooses. Finally plants include parts of plants like cut flowers. It is important to stress here that the plants protected should show quite

distinct and important differences or improvements to what is already in cultivation.⁸²

(B) THE BREEDER HAS THE EXCLUSIVE RIGHT TO LICENSE OTHER PERSONS TO SELL REPRODUCTIVE MATERIAL OF THE PLANIS OF THE VARIETY PROTECTED.

The quality of the reproductive material after all leads to an increased or decreased value of the plant and its products. Thus a breeder must have the exclusive right to licence other persons to sell reproductive material of the plants of the variety protected.

(C) THE BREEDER HAS THE EXCLUSIVE RIGHT TO PRODUCE AND AS WELL AUTHORISE AND LICENSE THE PRODUCTION FOR THE PURPOSES OF COMMERCIAL MARKETING OF THE REPRODUCTIVE OR VEGETATIVE PROPAGATING MATERIAL OR THE PLANT ITSELF.

This again is justified as it helps the breeder recoup his investments in innovation and development of the product of invention. It keeps him in control of the means of production and thus ensures necessary and valuable returns.

Thus if one were to specify in an abstract way the ideal features of an intellectual property rights system to protect plant varieties, key criteria would presumably include the following

- i. The subject matter of the rights should be well defined.
- ii. The grantee of the rights and other interested parties such as farmers, horticulturists and consumers can rely upon the validity of the rights when granted;

⁸²Bloom Adam, "The Prating of New Plant Varieties- More Problems to come with Biotechnology"

- iii. the likelihood of the grant of rights can be confidently anticipated by the parties making long-term investments in plant breeding without excessive cost or delay.

3.2 INSTITUTIONAL MECHANISMS FOR THE GRANT OF PLANT VARIETY PROTECTION CERTIFICATES

COMMISSIONER [At the national headquarters]

REGISTRARS [One in each State and Union Territory]

India is an agricultural country with a varied biodiversity. Here people (the farmers) have always been striving to obtain a better variety of crops and higher yield. So it's only natural that her farmers have through persistent efforts cultivated and produced new plants. Thus it is essential that there must be facilities for filing applications for new plant varieties in each State and Union Territory. Appointment of a Registrar to receive applications PVP (Plant Variety Protection) certificates in every state and Union Territory would be a right step in that direction. The Registrar in turn should forward the application to the Commissioner. For testing of a new strain a National Examination Centre for Plant Variety Testing and Evaluation must establish by the Indian Council of Agricultural Research. Headed by a director this examination centre should have various expert committees constituted on the basis of various crop classifications e.g. cereals, legumes etc. In cases where the particular strain has characteristics of two different crop classifications the two expert committees could together consider the same.

3.3 NECESSARY CONDITIONS FOR GRANTING PLANT VARIETY PROTECTION CERTIFICATES

Breeders 'rights should be granted only where the variety is⁸³

- i. new
- ii. distinct
- iii. uniform and

⁸³UPOV 1991, Art 5(1),

iv. stable

The requirement of novelty under plant breeders' rights law must be different from that under patent law. In this case only prior commercialisation should count against the applicant. Novelty here has a carefully limited meaning⁸⁴

By being distinct it is meant that the applicant's variety be clearly distinguishable by one or more important characteristics from any other variety⁸⁵

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 characteristics⁸⁶.

If the relevant characteristics of the variety remain unchanged after repeated propagation or, in the case of a particular cycle of propagation, at the end of each such cycle then the variety shall be deemed to be stable⁸⁷.

3.4 ENFORCEMENT MECHANISMS FOR BREEDERS RIGHTS

Any court case has taken years to be solved in India. Technology keeps changing while tardy legal procedures fail to keep abreast with it. A conflict over protection for a new plant variety resolved after 15 years of initiation of the legal battle would be as good as no resolution. Arbitration Committees could be an easier way out. Of course such committees could be given a maximum time period of one year for conflict resolution.

In keeping with this idea a Centre for Analysis and Resolution of Conflicts in relation to Plant Varieties should be set up by the Secretary, Ministry of Agriculture, and Government of India. The Centre will be autonomous in legal status and headed by a competent professional with expertise in conflict

⁸⁴Cornish, Intellectual Property, Sweet and Maxwell, 1981, p 615; Philips, Introduction to Intellectual Property Law, Butterworths, 1986, p 271.

⁸⁵ Christie Andrew, The Novelty Requirement in Plant Breeders' Right Law, IIC, Vol. 1988, P 652.

⁸⁶Art 8, UPOV 1991

⁸⁷ Art 9, UPOV 1991

resolution⁸⁸. This Centre can set up arbitration committees consisting of representatives of the commissioner, State Registrars and scientific and legal experts. Its decision should be final.

3.5 SUI GENERIS PROTECTION FOR PLANT VARIETIES- A REVIEW OF THE OTHER OPTIONS

The other existing forms of sui generis protection for plant varieties that exist internationally are the UPOV 1978 and the UPOV 1991 models. In order to assess their applicability or no applicability in India it is necessary to understand the level and standard of protection offered by both.

[i]UPOV 1978 and UPOV 1991 – The Level and Standard of Protection:

The difference in the levels of protection granted for Breeders' Right is evident from the fact that the 1978 version of UPOV contains a Preamble whereby States involved in its drafting express consciousness of the special problems arising from the protection of the rights of producers of new varieties of plant and particularly, the limitations public interest requirements may impose on the free exercise of such right⁸⁹. This preamble is altogether done away with in the 1991 version of UPOV signalling a reduction in public interest limitations.

The purpose of the UPOV Convention is to give plant breeders, rights in respect of their new plant varieties. In addressing the objective, the convention has two main functions. It seeks to establish and harmonise international criteria for the protection of plant varieties, as well as to establish a minimum scope of protection that must be granted to plant breeders by all UPOV member states⁹⁰ In this regard UPOV 1991 is more purpose specific than UPOV 1978. Article 1 of UPOV 1991 defines some essential terms like

⁸⁸ Art 15, Plant Variety Protection and Farmer's Right Act, Recommendations of the participants in the Dialogue on " Methodologies for Recognising and Rewarding Informal Innovation in the Conservation and Utilisation of Plant Genetic Resources" held in Madras from 28 to 31, 1994

⁸⁹ UPOV 1978 and UPOV 1991 Conventions

⁹⁰Greengrass Barry, UPOV and Farmers' Rights, Agrobiodiversity and Farmers' Rights, (edited by Swaminathan M.S), Konark Publishers Pvt.Ltd., Delhi, 1996, p.51.

breeder, breeder's right and variety. This makes it easier for a breeder to seek protection for a new plant variety.

Another pro breeder feature of UPOV 1991 is that the clause preventing double protection for plant variety that existed in the 1978 version⁹¹ has been removed. Now this implies that in countries where protection for new plant varieties can be sought in the form of patents and the UPOV recognised plant breeders' rights a much stronger level of protection exists.

Article 4 of UPOV 1978 it is not necessary for member countries to grant protection to all botanical genera and species. But UPOV 1991 is all pervasive and insists that within specified time frames the provisions of the Convention must be applied to all plant genera and species⁹²

The technical criteria for granting of protection to plant varieties under both UPOV 1978 and UPOV 1991 include distinctness, stability and uniformity. In addition to all this a variety must also be commercially novel. Greater stress has been laid upon each criterion in the 1991 UPOV. This is evident from the fact that in UPOV 1991 each criterion is dealt with in a single article. Thus the conditions of protection have remained the same in both UPOVs.

In UPOV 1991 the breeders' rights have become all encompassing. Art 14 of UPOV 1991 covers more acts for which authorization of the breeder is required than those enumerated in Art 5 of UPOV 1978. In UPOV 1978 prior authorisation of the breeder was required for the production for purpose of commercial marketing but under UPOV 1991 any production or reproduction [multiplication] would require authorization of the breeder. Other acts in respect of the propagating material of the protected variety for which authorisation of the breeder is required only as per UPOV 1991 are conditioning for the purpose of propagation, exporting, importing and stocking for facilitating any of the above acts. UPOV 1991 has taken note of the expansion of international trade. It is with regard to this that authorisation of the breeder for the purposes of exporting and importing has been included.

⁹¹ Article 2(1) UPOV 1978

⁹² Article 3, UPOV 1991.

Again UPOV 1991 re-enforces breeders' rights by providing that provisions contained in Art 14(1) to Art 14(4) would apply in cases where the variety in question was essentially derived⁹³ from the protected variety. But this was not the case in UPOV 1978⁹⁴.

In a country like India research with regard to plant varieties have been carried on at public have then been commercialised by the National Seeds Corporation and the various State Seeds Corporation. These corporations obtain the successful seeds from the agricultural institutes. UPOV 1978 has not prevented further research by such institutes and public funded universities on plant varieties for which breeders' rights have been granted⁹⁵.

However under UPOV 1991 breeders' rights would extend to such activities. Thus under the new circumstances once a breeder's right is granted for a particular variety no further research can be done on the same variety for commercial purposes by public funded bodies without the authorisation of the breeders of the said variety.

Lastly with regard to measures regulating commerce UPOV 1978⁹⁶ requires that such measures taken by any member State of the Union should as far as possible avoid hindering the application of the provisions of this Convention. However UPOV 1991⁹⁷ categorically states that the breeder's right is of any measure taken by the Contracting Party. Secondly such measures would not affect the application of the provision of the convention.

UPOV 1978 does not address the interests of all stake holders in the Indian context. It contains no provisions for safeguarding the rights of the indigenous people. Farmers have for millennia studied, identified, modified cultivated and exchanged seeds freely in order that they may provide for themselves the best, nutritionally, taste wise and for other specific purposes. In this capacity, the farmer has always been a scientific plant breeder⁹⁸ The Chhattisgarh area of the

⁹³ Article 14(5)(b) defines essentially derived varieties

⁹⁴ Article 5(3) of UPOV 1978

⁹⁵ Article 15 (exceptions)

⁹⁶ Art 14, UPOV 1978

⁹⁷ Art 18, UPOV 1991

⁹⁸ Shiva vandanalal, sustaining Diversity, Navadaya 1994, NewDelhi, p 1.

Indian variety of rice. Even today, a number of varieties of rice continue to be grown in the region.

India is indeed a centre of genetic diversity. It is here that the Asian strains of rice originated. Some of these varieties are the wild progenitors of all cultivated rice in Asia⁹⁹. In India, there are three major centres of genetic diversity. In 1951 when Baviolo published his book on the Centres of rice origin he said that the North-Western Himalayas was the primary centre of origin of cultivated rice. This primary centre of origin is expected to contain many dominant genes, some of which are resistant to disease, insect pests and biotic factors. Should farmers who cultivate these original varieties be encouraged to continue doing so? If yes to what extent? Don't people who's such "land races" to breed new varieties have to reward these farmers. These are some of the questions that UPOV 1978 fails to answer.

[ii] The Plant Varieties Act[1993]- A Critique of the Draft Legislation prepared by the Government of India.

The Plant Varieties Act [1993] draft legislation was prepared by the Government of India to give protection to new plant varieties. At the outset the Act itself applies to the whole range of plants". This totally exposes the plant sector and Indian agriculture to outside influence. Should not a few varieties be first opened to investments by MNCs [Multinational Corporation]and given protection for breeding of new plants. Only if such an experiment with few varieties satisfies most of the stake holders should the remaining plant varieties up for protection. To this criticism of the plant variety protection some might retort that the provisions of Sec 21¹⁰⁰ provide sufficient room for the government to intervene when things go wrong. But the government in our country has always been known to be slow in responding to an emergency. So the situation in the case of plant variety protection may not be too different when immediate action is to be taken. Prevention in such situations is always better than cure.

⁹⁹ Sharma S.D

¹⁰⁰ Clause 2, Plant Varieties Act, 1993, Draft Legislation prepared by the Government of India.

The Plant Varieties Act has not taken care of the commercial aspects of researchers' right. This Act just says that authorisation of the breeder would not be required acts done for experimental and/or research purposes and the researcher would have free and complete access to protected varieties for developing new varieties¹⁰¹. In India agricultural research has so far been carried on by the scientists at agricultural universities and other public funded institutions. Many of the varieties of rice, wheat, maize and other cash crops that have been developed by these institutes have been commercialised. Most of the new varieties have been produced scientifically from traditional varieties. So far no royalties were ever paid by the government to the conservers of these traditional varieties. Now if the researcher in such a public funded institution develops a new variety from protected variety and the same is commercialised would the researcher [i] have to seek the authorisation of the breeder for such purposes [ii] would have to pay royalty to the breeder of the protected variety. The Act is silent on this aspect of protection for plant varieties.

Again the Act requires the breeder to deposit a sample of seed and/or propagating material with the prescribed authority¹⁰², But the Act is silent about the security of the material. Would it be accessible to everyone before the breeder himself commercialises it? Our government offices have been quite slack when it comes to security of any nature. Would being non explication such matters dispel the security concerns of the plant breeders seeking protection?

Indian patent officers are ill equipped to examine new plant varieties in then changing international scenario. The Parliament itself must come out with a set of guidelines simultaneously with the Act for registration of varieties and grant of rights rather than leave the same for the Government to prescribe.

Again 'land races' as used in the Act should be both 'land races' and farmers varieties'. Land races used alone would signify plants that grow naturally un-

¹⁰¹ Sec 14, Plant Varieties Act (1993), the draft legislation prepared by Government of India.

¹⁰² Sec 15, *ibid*.

aided by man. Farmers Varieties are those that have been selected, crossed, improvised and bred by farmers over the centuries.

Sec 22 of the Act which deals with community and farmers' right prevents the local community and farmers from having an inherent say in matters relating to them.

Secondly rewards or compensation would be granted to them only if the National Authority feels that the community deserves so. This is highly unjust. In all decisions concerning genetic resources or germplasm taken from a particular area, local people should be involved in decision making

CHAPTER 4

THE REALISATION-OF FARMERS' RIGHT

INTRODUCTION

The genetic resources of the world have acquired their recognisable and economically important form because of the labour and in farmers (of both Tropical and Temperate regions). Food and cash crops, on which the survival of the human race is based, were created from wild plants in tropical forests by generations of careful breeding and selection¹⁰³. This innovative, laborious process carried out by the farmers of the Tropical regions has gifted the world a stable, secure food supply and many dollars to countries exporting agricultural surplus.

With the signing of TRIPS and the formulation of a sui generis legislation¹⁰⁴ becoming necessary for India it is important to understand what one exactly means by farmers' rights. It is possible to implement and protect farmers' rights only when one knows what they are. They must be both defined and

¹⁰³ Plant Variety Act- The Government's New Seed Law, Gene Campaign, New Delhi. P.4

¹⁰⁴ For protecting Plant Varieties

delimited. Farmers' rights (with reference to India) should consist of the following¹⁰⁵-

- i. The right of farmers to reproduce, modify, and exchange seeds and plant material
- ii. The right of farmers to ownership of biodiversity.
- ii. The right of farmers to information.
- iv. The right of farmers (community/individual) to payments (compensations) in cases where any breeder has used the said farmer's (farmers) plant variety to breed any other variety.

A. THE RIGHT TO REPRODUCE, MODIFY AND EXCHANGE SEEDS AND PLANT MATERIAL.

There are about 150 million land operators in India. These comprise of all operational land holders including tenants, people who have taken land on and other land holders. Such people are the decision makers – decision makers with regard to the kind of seed they would like to buy and the kind of seed they would sow.

In India people holding less than one hectare of land are called marginal farmers and those holding between one to two hectares are called small farmers. These two classes of farmers comprise about 78% of the operational holders and they operate only 29% of the land.

Those farmers who hold between two to four hectares of land are semi medium farmers and so on. All these various types of farmers live in 600,000 villages. Remoteness in terms of communication varies from village. It may take around four days to reach a village in Arunachal Pradesh while one could visit all the villages near Bangalore and return back the same day.

It is this remoteness of a village from another that brings to focus the necessity of the farmers to exchange seeds. In India since times immemorial farmers

¹⁰⁵ Shiva Vandana, et al, Sustaining Diversity, Research Foundation for Science, Technology and Natural Resources Policy, 1994, p.16; A charter of Farmers' Rights, Third World Resurgence, No.39,p.28

have always kept the best seeds for sowing the next year, the second best for self consumption and the third for sale or exchange or both. Again in many cases they exchange their grain with those of another farmer who possesses a better quality of the same grain.

Thus exchange has always been one of the basic pillars of cooperation among members of the farming community. To deny them this under any sui generis legislation would be a defacto denial of their right to livelihood.

Farmers are keen observers of nature and her myriad ways. Their rich experience enables them to modify seeds and plant material to withstand nature's fury and uncertainties. Enacting legislation to prevent such modification is nothing but putting a stop to the inevitable.

Without granting the right to reproduce the other two rights become meaningless. The right to reproduce is again debatable. What if a seed company possesses technology to prevent germination of the produce from a particular seed¹⁰⁶? Should this company be banned from selling its seeds in the Indian market? Or will this be against the general principles of fair trade and commerce.

B. THE RIGHT TO OWNERSHIP OF BIODIVERSITY

Farmers have for millennia, studied, identified, modified, cultivated themselves and exchanged seeds freely in order that they may provide for best, both nutritionally, taste wise, and for other specific purposes¹⁰⁷ Anthropologists and geneticists state several reasons about why tribal's and rural farmers should be involved in biodiversity conservation¹⁰⁸. Firstly theirs

Is the habitat in which the biodiversity is located? Secondly their daily activities determine the survival of this diversity. Then again the information and seed material that was collected over several generations from the tribal's,

¹⁰⁶ Delta and Pine Land Co. In the U.S. has come out with a new 'terminator' technology that prevents further germination of harvested cotton seed.

¹⁰⁷ Shiva Vandana, et al, Sustaining Diversity, Research Foundation for Science, Technology and Natural Resources Policy, 1994, p.1

¹⁰⁸ Kumar Sushil, "Tribal and Rural Farmer- Conservers" (edited by Swaminathan M.S), Agro biodiversity and Farmers' Rights, Konark Publishers Pvt, Ltd, Delhi, 1996,p.163

rural farmers and village traders has been an important input to programmes developed which in some parts of the world led to the green revolution.

But is it this poverty, this below subsistence living that we would like our farmers and tribal's to continue living in, in the name of maintaining biodiversity.

The right to ownership of biodiversity means the right to obtain funds for the conservation of biodiversity. For this a National Community Gene Fund should be set up for rewarding communities efforts have provided the basic material to researchers for development of new plant varieties. The National Community Gene Fund should be autonomous and administered as an independent trust. Resources for such a fund could be generated by a levy of 1% on the sale of seeds¹⁰⁹. No businessman would ever like to pay for conservation efforts when he directly does not obtain the benefits of such conservation.

Hence to begin with the levy has been kept at a low of one percent. There should be adequate representation of tribal and rural families and the seed industry on the board of trustees of the National Community Gene Fund. Funds never really seem sufficient. Hence initially the Fund should be devoted to conserving rice, wheat, sugarcane, edible oils, maize and millets. Allocation of funds could be based on suggestions from scientists working at different agricultural universities, plant variety research centres and NGOs in the field and from village panchayats those¹¹⁰ these funds could be used to provide for marketing of the products, buying of fertilisers or other similar agricultural necessities.

C. THE RIGHT TO INFORMATION ABOUT NEW AGRICULTURAL TECHNOLOGY (Indian)

¹⁰⁹*ibid*, p.206- Seeds sales have been assumed at Rs 1,000 Crores annually.

¹¹⁰Mr.Rajan, Secretary- Dept of Agriculture and Corporation, Government of India also talked of plans to set up community gene funds where some kind of rewards would be granted to farmers responsible for breeding certain varieties. Here Mr.Rajan does not mean royalties for each seed sold but some kind of initial benefit as a reward (his reaction reveals the reward to be some kind of small benefit or advantages)

The tax payers money has always been used to fund a lot of public sector research in India In the public sector, there are presently 72 All India Co-ordinated Research Projects of the Indian Council of Agricultural Research (ICAR), such as the All India Rice Improvement Project, the All India Wheat Improvement Project and the All India Potato Improvement Project¹¹¹. The All India Rice Improvement Project, for example, includes about 75 centres operating in rice, with breeders, pathologists, entomologists and physiologists working as one team which meets every year to review whole programme and decide on the identification and release of varieties¹¹². India also has 28 State Agricultural Universities (SAU) as well as the Indian Agriculture Research Institute (IARI).

Farmers all over the country have the right to be informed about new technologies with regard to agriculture. In many of the universities then research done does not ultimately reach and benefit the farmer. Funds to such agricultural universities especially the State Agriculture Universities should be given only if the research programmes are ultimately aimed at benefitting the farmers in that region.

D. THE RIGHT OF FARMERS (COMMUNITY/INDIVIDUAL) TO PAYMENTS (COMPENSATIONS) IN CASES WHERE ANY BREEDER HAS USED THE SAID FARMER'S (FARMERS) PLANT VARIETY TO BREED ANY OTHER VARIETY

No breeding of new plant varieties has ever been possible without the use of existing varieties. Farmers have down the ages added their intellectual input towards evolution of new plant varieties. Being breeders in their own ways they have always had a role to play in

In this age of biotechnology where resources are scarce and investments high, the modern day breeder is always looking out for returns.

¹¹¹ Rao M.V, "View point of Public Sector Plant Breeding Institutions", (edited by Swaminathan M.S),Agro biodiversity and Farmers' Rights, Konark Publishers Pvt, Ltd, Delhi, 1996,p.136

¹¹²*ibid*

Thus it is only fair that the farmer whose variety has been used as raw material by any other breeder to breed a new variety be rewarded or compensated for his effort.

Hence any Sui generis legislation with regard to plant varieties must make provisions for all the four farmers' rights.

4.1 FARMERS' RIGHTS

The issue of Farmers' Rights was introduced by NGOs lobbying the FAO in 1985. This was a reaction to the Northern agenda to strengthen Plant Breeders' Rights (PBRs) in the undertaking which was adopted at the 1983 FAO Conference¹¹³. This concept resulted from debates that started in 1979 in FAO, concerning the asymmetric benefits derived by the donors of germplasm and the donors of technology. Commercial varieties are ultimately the product of applying breeders' technologies to farmers' germplasm and while the farmer may generate returns, through Plant Breeders' Rights or other Intellectual Property Rights legislation, no system of compensation or incentives for the providers of developed¹¹⁴. During these debates, even the principle that germplasm should be available for scientific and breeding purposes, was questioned. There was to be recognition of the rights of germplasm donors and they were to be compensated for their contribution.

4.2.1 INTERNATIONAL AGREEMENTS ON FARMERS' RIGHTS:

The above mentioned debates finally led to a negotiated compromise: the simultaneous and parallel international recognition of Plant Breeders' and Farmers' Rights. FAO Conference Resolutions 4/89, 5/89 and 3/91 embody this recognition. These three resolutions were negotiated by the commission Plant Genetic Resources (PGR) and unanimously adopted by more than 160 countries in 1989 and 1991.

¹¹³Tauli-Corpaz Victoria, "Where do we go from Leipzig? Farmers Rights and the Battle for Agro biodiversity, Third World Resurgence, Third World Network, Malaysia, Aug/sep 96,p.10.

¹¹⁴Esquinas-Alcazar Jose, " The Realisation of Farmers' Rights", (edited by Swaminathan M.S), Agro biodiversity and Farmers' Rights, Konark Publishers Pvt, Ltd, Delhi, 1996,p.4

4.2.2 DEFINITION OF FARMERS' RIGHTS:

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 centres of origin/diversity. These rights are vested in the International Community, as trustees for present and future generations of farmers, for the purpose of ensuring full benefits of farmers and supporting the continuation of their contributions".

4.2.3 OBJECTIVES OF FARMERS' RIGHTS:

Resolutions 5/89 of the FAO conference further defines objectives of

Farmer's Rights as being to:

“Ensure that the need for conservation is globally recognized and that sufficient funds for these purposes will be available”

"Assist farmers and farming communities, in all regions of the world, but especially in the areas of origin/ diversity of Plant Genetic Resources in the protection and conservation of their Plant Genetic Resources, and of the natural biosphere”.

"Allow farmers, their communities, and countries in all regions, to participate fully in the benefits derived, at present and in the future, from the improved use of Plant Genetic Resources through plant breeding and other scientific methods”.

4.2.5 IMPLEMENTATION OF FARMERS' RIGHTS AND AGREED:

“That farmer' Rights will be implemented through an international fund on Plant Genetic Resources which will support plant genetic conservation and utilisation programmes, particularly, but not exclusively, in the developing countries”

"That the effective conservation and sustainable utilization of Plant Genetic Resources is a pressing and permanent need and therefore the resources for the international fund as well as for other funding mechanisms should be substantial, sustainable and based on the principles of equity and transparency".

"That, through the Commission on Plant Genetic Resources, the donors of genetic resources, funds and technology will determine and oversee the policies, programmes and priorities of the fund and other funding mechanisms, with the advice of the appropriate bodies¹¹⁵

2.4.6 KEYSTONE INTERNATIONAL DIALOGUE AND FARMERS' RIGHTS:

The Keystone International Series on Plant Genetic Resources were a series of three meetings held at Colorado, Madras and Oslo between 1988 and 1991. The series which predated the Convention on Biodiversity, certainly helped articulate many issues and develop a large degree of global consensus on the need for recognising and rewarding farm women and men for their contribution towards the conservation and enhancement of genetic resources¹¹⁶

In the Keystone Dialogue the participants recognised that Farmers' Rights involved what they called the GIFTS, a term that adequately summarises Farmers' Rights. The term refers to access and control of germplasm ("G"), farmers' information ("I"), financial resources ("F"), technology transfer ("T") and systems of trade and research ("S").

The Third and final Session of the International Dialogue, in Oslo in 1991, proposed a "Global Initiative for the Security and Sustainable Use of Plant Genetic Resources, including a fund for Plant Genetic Resources. The financial estimates previously made were reviewed and it was concluded that "a minimum of \$1.5 billion of additional funds (would) be needed during

¹¹⁵The second session of the Keystone International Dialogue, Madras, 1990, agreed to purpose that "the best way of recognising Farmers' Rights would be a mandatory fund", and that "there should be a compulsory funding mechanism". It also stated that for an International Fund for Plant Genetic Resources, "conservative estimate indicates that at least US \$500 million per annum should be available to begin to meet these urgent needs.

¹¹⁶*Supra* n 39, p.28

1993-2000. The Dialogue report emphasised that the fund "should be established on a sustainable basis", and that "it should be taken from existing development assistance budgets and not be subject to erratic or unreasonable fluctuations"¹¹⁷.

2.4.7. CONVENTION ON BIOLOGICAL DIVERSITY AND FARMERS' RIGHTS¹¹⁸

The Biodiversity Convention provides an opportunity to governments' to protect agricultural biodiversity, farmers' livelihood, and sovereign rights to biodiversity. However no article in the Convention directly addresses farmers' rights or mechanisms for the compensation of indigenous knowledge.

The Convention recognises the rights of biodiversity as the sovereign rights of nation states¹¹⁹. These need to be built on the prior rights of communities who have conserved and protected biodiversity within national territories.

In the preamble the Convention states that Contracting Parties recognise "the close and traditional dependence of many indigenous and local communities embodying traditional life styles of biological resources, and the desirability of sharing equitable benefits arising from the use of traditional knowledge, innovations and practices, relevant to the conservation of biological diversity and sustainable use of its components"

Art 10(c) and 18.4 refer to indigenous practices, but not to rights of farmers or local communities. Article 10(c) states:

Each contracting party shall as far as possible and as appropriate protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements.

Article 18.4 states

¹¹⁷ *Supra* n 42, p.15

¹¹⁸ Shiva Vandana, *Future of our Seeds, Future of Our Farmers*, Research Foundation For Science, Technology and Natural Resource Policy, Delhi, 1990, p. 12-13.

¹¹⁹ Art 3. Convention in Biological Diversity.

The contracting parties shall in accordance with national legislation and policies, encourage and develop methods of co-operation for the development and use of technologies, including indigenous and traditional technologies in pursuance of the objective of this Convention.

The Biodiversity Convention thus offers avenues for the protection of farmers' rights and national rights to biodiversity.

In Situ¹²⁰ conservation of cultivated biodiversity makes it, imperative that the of farmers' rights, be evolved and implemented to enable farm communities to effectively conserve local biodiversity.

The challenge for operationalising farmers' rights is therefore to give them a due place in the implementation of IPR legislation.

The Convention, however, failed to protect farmers' rights over existing ex situ collection of seeds. The battle that had been forged over the last two decades within the FAO with regard to "ownership" of these collections was lost in the convention negotiation¹²¹.

Recognition of sovereign rights in the Convention on Biological Diversity must also be interpreted as the sovereign rights of local peoples, who may choose to delegate authority to the states. The WTO Dispute Settlement Body would be a useful forum for adjudicating international jurisdictional controversies¹²²

Presently the Biodiversity Convention is more "friendly" in recognising farmers' rights to their knowledge over the use of biodiversity. The rights of indigenous people are also likely to enter the Convention's future agenda. The treaty's references to intellectual property rights are finely balanced between

¹²⁰ Art 8, Convention on Biological Diversity.

¹²¹ Nijar G.S., Ling Chee Yoke, Intellectual Property Rights; The Threat to Farmers and Biodiversity Third World Resurgence, No.39, 1993, p.40.

¹²² "The Leipzig Commitment to Agricultural Biodiversity", Third World Resurgence, No 72/73, 1996., p.18.

recognising the need to implement IPRs and the need to ensure that IPRs do not block the sustainable use of biodiversity¹²³.

4.2.8_ THE TRIPS AGREEMENT OF WTO AND FARMERS' RIGHTS:

The TRIPS Agreement is not a harmonisation. It does not require every country to have identical laws. Rather, it establishes certain basic provisions with which each country's legislation should comply. It has three main elements to it.

First the agreement deals with substantive standards of protection. It establishes minimum standards of protection that each signatory government is required to apply in each of the main areas of intellectual property.

Second it contemplates effective enforcement of Intellectual Property Rights. It contains procedures and remedies that must be available through the national law and the national enforcement bodies are required to assure that individual owners of Intellectual Property Rights can secure effective enforcement of their rights.

Disputes between member governments over whether a government has complied with its obligations under agreements are dealt with by the application of the Integrated Disputes Settlement Mechanisms of the WTO.

Thus TRIPS includes a minimum standards agreement, which leaves countries free to provide for higher levels of protection or more extensive protection, if they so wish. This is revealed when we consider two specific aspects of the TRIPS Agreement. The first of course is with regard to the patentability of plants and animals. And the second is the protection afforded to geographical indications intimately associated with certain agricultural products. Art.27 (1) of the TRIPS Agreement incorporates the already widely accepted criteria for patentability. Thus the principle is that any invention which meets these criteria should be patentable in any field of technology discrimination, subject

¹²³Khor Martin, A Worldwide Fight Against Bio-Piracy and Patents on Life, Third World Resurgence. No 63, 1995.

to several exceptions. One of the exceptions to the basic rule relates to plant and animal invention.

This provision leaves countries free, if they so wish, to exclude from Patenting essentially biological processes as well as plants and animals other than micro-organisms and micro-biological processes. TRIPS does add a stipulation which requires that if a country does not provide patents for plant varieties, it would be obliged to introduce an "effective sui generis system" for their protection.

The question has arisen over time as to what is meant by the expression the "effective sui generis system" of protection for plant varieties. There is no drafting history as far as TRIPS is concerned to explain "effective sui generis system".

The sui generis systems or specific systems relating to plant variety protection which existed were embodied in the various conventions of UPOV and reflected in national legislation. TRIPS however do not actually refer to UPOV nor does it require a country to have legislation similar to or identical and consistent with UPOV. But the general view is that if a country is in conformity with the 1978 version of UPOV, it should feel comfortable that it is in conformity with its obligations to assure given level of protection under the TRIPS Agreement the standard of protection poses more difficult questions regarding the number of species and varieties that would need to be covered.

The TRIPS Agreement is basically neutral on the issue of FARMERS RIGHTS. It does not require them to be granted, and it is likely that a country would find it difficult to mount a successful challenge against another country under the Disputes Settlement Process on the grounds that the other country failed to provide for Farmers Rights. At the same time there is nothing in the TRIPS Agreement that stands in the way of a providing Farmers' Rights. In cases where the indigenous people or local communities qualify to meet the standards required for protection of plant genetic material under the TRIPS Agreement they would be eligible to benefit. However, the issue of adapting forms of protection appropriate for the particular circumstances of such people

was not raised during the TRIPS negotiations, nor in fact was the whole issue of FARMERS' RIGHTS.

4.2.9 TRIPS, GEOGRAPHICAL INDICATION AND FARMERS' RIGHTS

A geographical indication is a term applied to products whose quality and characteristics are attributable to their geographical origin. In other words a special link between the goods and their place of origin i.e. natural and human factor which are to be found exclusively in the respective area, must be established.¹²⁴

The TRIPS Agreement also provides protection for geographical indication associated with products. This is relevant to situation in which produce, usually agricultural produce has special characteristics because of the area of origin, or simply as a result of reputation. The concept has broader application. Basmati rice and Darjeeling tea might as well be an example as far as India is concerned. The issue here relates to the rights of the people who produce these products to stop others from using the geographical name in marketing produce which does not come from the given geographical area.

The basic requirement under the TRIPS Agreement is that such parties must have the rights to prevent the use of the geographical term on produce where this would mislead the consumer or be an act of unfair competition. In the case of wines and spirits at least for the time being stronger rules apply. This form of protection is perceived, at least in Europe, as being an important form of protection which enables farmers using traditional farming techniques and producing specialised products to achieve a higher value, from their production and marketing of these goods. Thus to that extent, the system of protection for geographical indications has the potential to enable to realise the benefits from this type of production.

¹²⁴ Intellectual Property Reading Material, WIPO Publication No.476 (E). Geneva 1995,p.243.

4.2.10 THE FOURTH FAO INTERNATIONAL TECHNICAL CONFERENCE ON PLANT GENETIC RESOURCES AND FARMERS' RIGHTS

The battle over who should have control and access to agricultural biodiversity was basically what the Fourth International Technical Conference on Plant Genetic Resources (ITCPGR) at Leipzig was all about. This had been fought out at the FAO, particularly in its Commission on Plant Genetic Resources (now the Commission on Genetic Resources for Food and Agriculture) which was created in 1983. The Leipzig Conference which was held between 17 to 23 June 1996 had been convened to address this issue once more.¹²⁵

Representatives of most countries and many Non-Governmental Organisations (NGOs) as well as international organisations met to finalise negotiations on a Global Plan of Action for the Conservation and Sustainable Utilisation of Plant Genetic Resources for Food and Agriculture (GPA)¹²⁶. As a result of the intense lobbying done by the farmers, NGOs, indigenous peoples, etc., and the tenacity of some government negotiators who were determined to have Farmers' Rights reiterated in the Global Plan of Action, some victories were won.

From the very first day of the ITCPGR, the negotiations were deadlocked on the issue of Farmers' Rights. The US delegation refused to budge from its position that Farmers Rights was just a concept. The G77 delegates, who were not so organised and united at the start, finally geared up and consolidated their position. The farmers and NGOs stood firm that Farmers' Rights must be prerequisite to the implementation of the Global Plan of Action.

The spokes-person for G77, Venezuela pushed hard for Farmers' Rights. Malaysia and the Philippines even went beyond the G77 stance by pushing for a commitment to the legal protection of Farmers' Rights. Isolation forced the US to compromise. Still, it managed to insert language that can be used to

¹²⁵Tauli-Corpaz Victoria, "Where do we go from Leipzig?", *Third World Resurgence*, No.,72/73, 1996,p.10.

¹²⁶EgzibherTewoldeBerhanGebre,'The US versus Agro-biodiversity', *Ibid*,p.4.

favour its own interests, which is to reinforce support for its transactional agribusiness and biotechnology companies.

The consensus text which was finally reached commits the world community to recognising the need and the rights of farmers and farming communities to have access to the germplasm, information, technologies, financial resources, and marketing systems necessary for them to continue to manage and improve plant genetic resources.

The text also states that countries will commit themselves to promoting 'a fair and equitable sharing of the benefits arising from the use of plant genetic resources for food and agriculture, recognising the desirability of sharing equitably benefits arising from the use of traditional knowledge, innovations and practices relevant to the conservation of plant genetic resources for forests and agriculture and their sustainable use'.

Paragraph 18 of the final document refers to the needs and individual rights of farmers and, collectively, where recognised by national law to have non-discriminatory access to germplasm. Other references to Farmers' Rights are paragraph 60 which states that many governments are seeking to realise Farmers' Rights, through national legislations, as appropriate and paragraph 62 which recognises the need, to realise Farmers' Rights, as defined in FAO Resolution 5/89.

All these still fall short of what farmers would have wanted. Relegating the recognition of Farmers' Rights to national legislations is not enough because worsening conditions of farmers are not the consequences only of national developments but, increasingly of global impositions. This is precisely why Farmers' Rights are being brought into the international arena. Nevertheless, the goal of the farmers and NGOs to ensure that the space for Farmers' Rights would not be closed at Leipzig but would instead be developed further was achieved.

CHAPTER 5

A CRITICAL REVIEW OF THE AVAILABLE BILLS

INTRODUCTION

In two of the previous chapters we have discussed about farmers' rights and a brief history of the philosophy and thought with regard to the same. Rights are defined in transposition to other correlatives like duty, liability, immunity and privileges that are essential in a rights discourse. But so far as the farmers' rights are concerned the correlatives are extremely poor because of the very nature of the right vis-a-vis the plant breeders rights. The farmers' right from the point of view of an individual looks palpably very poor and indistinguishable. These rights are virtually collective rights¹²⁷ and as such cannot be evaluated as an individual right actionable. In contradistinction, breeders' rights are clear, individualistic and analytically per se actionable. As

¹²⁷Riley Kenneth, "Farmers Rights CGIAR and IPGRI" (edited by Swaminathan M.S.), Agrobiodiversity and Farmers' Rights, Konark Publishers Pvt Ltd., Delhi 1996, p.59.

for example the farmers rights mentioned in the Swaminathan draft¹²⁸ of the Plant Variety Protection and Farmers Rights Act from the contribution of farm women and men and rural and tribal families to the creation, conservation, exchange and knowledge of genetic and species diversity of value in plant breeding. Here the concept of right is confused rights only speak about a plea for generating a fund the use of which will create further confusion. But breeder rights from that point of view, more clear, focused and actionable for and against an individual and completely operative through market mechanism. Of course the draft bill¹²⁹ which Government of India is planning to place before the Parliament is slightly clearer though hardly individualised and proportionalised. Farmers rights in the draft include rights to save, use, exchange, share and sell his farm produce of the protected seed under commercial marketing arrangements. But these rights do not include the traditional right of farmers for reproduction and preserving the plant genetic resources from time immemorial. The proposed Indian legislation envisages creation of a National Community Gene Fund with a share of the royalties on seed sales in order to strengthen farmers plant genetic resources activities including providing incentives for the conservation and further development of the resources by the farmers through cooperation between farmers, breeders and international research services. It has been observed that farmers' rights are not just a question of justice and equity but also of ensuring the genetic resources on which we all depend and which are to be conserved to be made available in future.¹³⁰

The intellectual property right protection is seen as an act of necessity to attract private investments in biotechnology and genetic engineering. But it goes without, saying that the farmers created a vast plant genetic resource base, reproduced and preserved them for ages. The plant breeders only act upon those resources. As a matter of fact it has been rightly pointed out that there is great interdependence among countries for plant genetic resources for food and agriculture. An author while explaining the quantum of this

¹²⁸ Art 8: Farmers' Rights.

¹²⁹ Art 17: Farmers' Rights.

¹³⁰ Esquinas – Alcazar Jose, "The Realisation of Farmers Rights", (edited by Swaminathan M.S.), Agrobiodiversity and Farmers' Rights, Konark Publishers Pvt Ltd., Delhi 1996, p.15.

interdependence suggested that the average interdependency at the regional level for, e major crops is estimated to be more than 70% and at the national level more than 90%. The Afro Asian countries situated in the tropical zone having rich plant varieties and bio-diversity are often the sources of knowledge for the plant breeders. Therefore the exact controversy relates to the main issue of how much to reward for the last innovation by the plant breeder and with what recognition and interest protection of the farmers' for all that they have contributed towards the past, present and in the future. The narrow intellectual protection view which can suit the industrial world cannot meet the rational and equity claim when it is put to the world of agriculture. As such the TRIPS agreement very aptly allows the member nations to develop sui generis law to protect farmers' rights by the end of 1999.

The 'Swaminathan draft' as well as the Government Bill talks about a Community Gene Fund. A detailed discussion about the structure and management of the fund shall be given afterwards. It may be noted here that whereas breeders' rights are protected in the individual rights of the claimant through market mechanism, farmers' rights are not protectable by any such direct application.

There are several other legal problems, as for example how should we define farmer. The government bill defined 'farmer cultivator' and 'farmer conserver' though the word farmer has not been expressly defined.

The sui generis protection that the government of India is contemplating necessarily, therefore, attempts at protecting public interest in a very complex issue of demand for protecting private interest mainly because market forces cannot protect farmers' rights though it can very effectively protect private interest of a breeder. The matter becomes further delicate because of the varied nature and interest of the farming community. The government proposed for creating a Farmers' Rights Protection Authority [FRPA] has in turn formed authoritative regime which may breed in corruption. This regime has to consist of people whose interests are affected.

5.1 COMMUNITY GENE FUND AND ITS MANAGEMENT

The Government Draft constituting the National Community Gene Fund¹³¹ stipulated that the Gene Fund shall be constituted from

- (a) grants by the Government
- (b) donations from all sources; and
- (c) portion of the registration fee collected by the authority for granting the breeders rights through the procedure of registration.

The composition of the fund has no stipulation making breeders responsible for payment of a portion of their right. It is the breeder who uses the knowledge acquired by the farmers for reproduction and conservation of seeds on which they take a quantum leap through genetic engineering. Therefore they are required to be bound by law to make available a portion of the royalty.

In my earlier submission in the farmer's rights, I have pleaded for such to be taken out of the royalty received. Instead of rationalising the same the constitution of the fund in the government proportion has relied on a grant the government obviously through public finance which only imposes a further tax on the taxpayers.

The fund has been proposed to be used for the community benefit for supporting conservation and sustainable use of genetic resources. The fund is also to be used for rewarding the contribution of farmer conservers or their communities as also for the maintenance and conservation of agro biodiversity and on farm innovation.

Of course it has been said that there has been a rule for using the fund but the very nature of rights involve complexities in allocation of protective measures.

Swaminathans's draft of course proposed to have the fund as an autonomous trust. Here the proposal has a more realist approach. It contains that an applicant for plant variety recognition will provide with the application the pedigree of the variety and the approximate location of the folk variety if

¹³¹ Sec 18, Government Draft Bill on Protection of Plant Varieties.

possible. The commissioner or the registering authority shall with the help of the National Bureau of Plant Genetic Resources identify the location including the communities involved in production and maintenance of the variety. On the basis of that a royalty of five percent of the gross value of the seeds sold would be credited to the Community Gene Fund. The problem here is that of calculation of five percent on the gross sale proceeds because this gross sale proceeds would be difficult to evaluate at a given time. But obviously the stipulation has a sound moral basis.¹³²

5.2_ MANAGEMENT OF THE FUND¹³³

Swaminathan's draft outlines a management pattern of the trust which will have an executive director, an eminent person known for experience in dealing with the intellectual property protection of rural and tribal families. The fund will also have a fund management committee comprising of representatives of the farmers, professionals and members of the mass media.

They are required to be nominated by the minister. Forty percent of the management committee will be women. The fund is to be utilised to strengthen the in situ conservation activities of local committees in areas threatened with serious gene erosion. The executive director on the information of the registration authority [the commissioner] will inform each year the concerned elected panchayats about the amount of royalty available for strengthening the in situ conservation activities.

The panchayat then shall decide how the funds are to be utilised. Besides the gram panchayat organisations like van panchayat and tribal council could also be the agencies for such action. The amount may be used for grain drying, creation of storage facilities, adaptation of technologies and training in seed preservation. The government draft stipulates that the Plant Variety and

¹³² Art 23(5) read with Art.9 of the 'Plant Variety Protection and Farmers' Right Act' framed from the Recommendations of the participants in the Dialogue on 'Methodologies for Recognising and Rewarding Informal Innovation in the Conservation and Utilisation of Plant Genetic Resources' held in Madras from January 28 to 31, 1994.

¹³³ Art 23(2), 23(6) and 23(7), *ibid*

Farmers' Rights Protection Authority¹³⁴ shall administer the fund in accordance with the rules for:

- i) supporting the conservation;
- ii) sustaining use of genetic resource;
- iii) recognising and rewarding the contribution of farmer conservers and their communities;
- iv) preservations of wild relatives of agro biodiversity;
- v) on firm innovation for enhancement of agro biodiversity.

The Authority shall consist of a person of outstanding calibre of national eminence in plant varietal research or agriculture with at least twenty years experience. The authority shall have the following members:

- i) agricultural Commissioner
- ii) deputy Director General (Crop Sciences), Indian Council of Agricultural Research
- iii) horticulture Commissioner
- iv) director, National Bureau of Plant Genetic Resources
- v) director, Centre for Cellular and Molecular Biology
- vi) registrar General, Central Plant Variety Protection Authority who shall also be the member secretary.

The Act contains certain guiding rules for the performance of the authority.

The two above models of authority to use the fund are the reflections of the thinking of the experts and of the government. In the government proposal there is a heavy reliance on government officials and a complete absence of people and farmers representatives.

¹³⁴ Sec 4. Government Draft Bill on Protection of Plant Varieties.

The use of the fund and its pattern of decision to use is completely executive and a top down process. It has been the experience in the functioning of all authorities in India that the top down model cannot make benefits percolate at the grass root level. It alienates the beneficiaries and suffers from a peculiar psyche that people cannot take decisions and there has to be executive governance. The authority is also under the government scheme no responsible to work with the grass root level where the farmers' interest lies. As a result, it is feared that farmers will not only be allowed to identify their interests but shall also be completely in the dark about protective mechanisms. This type of authority relation can hardly do any visible or incremental benefit.

5.3 CATALOGUING OF THE PLANT VARIETIES

In India, there is no systematic record of plant varieties and biodiversity though there is a strong general knowledge about the same. A young British district collector is the only reference of identity of flora and fauna in India. It is now essential that the authority has to prepare an exhaustive catalogue and maintain a depository of records of all catalogued varieties of seeds. This will ensure the proper mapping and cataloguing of plant varieties and biodiversity existing in India. A comprehensive catalogue shall ensure the authority to charge royalty on new seed variety for protecting the farmers' rights.

The authority is going to have enormous responsibility in so far as

- a) ensuring the cataloguing of plant varieties and maintenance of a depository of information;
- b) protection of new varieties;
- c) ensuring the rights of breeders through registration;
- d) determining compulsory licensing and protection of public interest;
- e) granting and revocation of license; and
- d) any other act that the Central Government may from time to time assign to the authority.

The constitution of the authority is required to be representative in character and must take care of the interests of the farmers. The constitution of the fund management committee can be an outline for the constitution of the authority with suitable changes representing agro research interests and the government.

I also suggest that the fund management is not to be vested in the authority because of the enormous responsibility of the authority. The Fund may be used by a fund management committee as suggested in the Swaminathan draft. Of course the authority may have supervisory jurisdiction on the fund management.

The Seeds Act 1966 provides for regulating the quality of seeds for sale and for matters connected therewith. There is a Central Seeds Committee to advise the Central Government to implement the statute. There is Central and State Seed Laboratories¹³⁵ to make an analysis of seeds of any notified kind and variety. The statute prescribes minimum limits of germination and purity of seeds.¹³⁶ No person is allowed to carry on the business of selling; keeping for sale, offering to sell any seed of any notified kind or variety unless the seed is identifiable, conforms to minimum limits of germination and bears in the prescribed manner the mark or label containing the correct particulars.¹³⁷

There is provision for a certifying agency¹³⁸ and there is a Central Seed certification Board.¹³⁹ The State Government has to appoint Seed Inspectors with the powers prescribed.¹⁴⁰ The Seed Inspectors have to exercise their powers according to procedures established by law.¹⁴¹ Therefore, once the depository is established with a catalogue of variety of plants the building up of initial records may not be very difficult. The procedure for protection of rights of new varieties for a period of fifteen years¹⁴² has not been clearly laid down in the government draft. The application procedure has to be laid down with requirements of specification and product identification. It is of course

¹³⁵ Sec.4, The Seeds Act, 1966.

¹³⁶ Sec.6, The Seeds Act, 1966.

¹³⁷ Sec. 7, The Seeds Act, 1966.

¹³⁸ Sec.8, The Seeds Act, 1966.

¹³⁹ Sec.8A, The Seeds Act, 1966.

¹⁴⁰ Sec.14, The Seeds Act, 1966.

¹⁴¹ Sec.15, The Seeds Act, 1966.

¹⁴² Sec.8, Government Draft Bill on Protection of Plant Varieties.

provided in the government draft that every new variety has to contain a clear cut distinct denomination for identification.¹⁴³ The procedure of application, notification, objection, procedure of hearing, granting of registration etc., are required to be done by Rules and the government draft does not have any rule making power for the government.¹⁴⁴ The authority however has the competence to lay down procedure for the conduct of its business but for that also the government ought to have rule making power.¹⁴⁵

Swaminathan's draft has many special features. In so far as the procedure is concerned a detailed procedure for application of plant variety rights and an outline of the application form is given.² The application is to be lodged with the Secretariat on the satisfaction of the commissioner that the application complies with the stipulated requirements and the specified fees have been paid. The procedure of acceptance,¹⁴⁶ testing,¹⁴⁷ conflict resolutions,¹⁴⁸ objections to be filed¹⁴⁹ and registration by granting¹⁵⁰ the plant variety rights have also been provided. of course, the details in the Articles as drafted is not put into lawyers drafting. Therefore, it requires a serious redrafting. The government bill as was said is very incomplete. It is therefore necessary that the procedure laid down in the Swaminathan Bill, of course redrafted in the legal language be included in the government draft. The government draft provides national treatment¹⁵¹ to breeders who are natural and legal persons resident or having their registered office in a Convention Country.

In fine as suggested earlier the draft of the government bill is required to be richer with various provisions made in the Swaminathan draft which happens to be the recommendations of the participants in the dialogue on “methodologies for recognising and rewarding informal innovation in the

¹⁴³ Sec.11, *ibid.*

¹⁴⁴ Sec. 31(v), *supra* n. 115.

¹⁴⁵ Sec.4(v), Government Draft Bill on Protection of Plant Varieties.

¹⁴⁶ Art.10 and 11, of the ‘Plant Variety Protection and Farmers’ Right Act’ framed from the Recommendations of the participants in the Dialogue on ‘Methodologies for Recognising and Rewarding Informal Innovation in the Conservation and Utilisation of Plant Genetic Resources’ held in Madras from January 28 to 31, 1994.

¹⁴⁷ Art 13, *ibid.*

¹⁴⁸ Art 14, *supra* n.119.

¹⁴⁹ Art 15, *supra* n.119.

¹⁵⁰ Art 16, *supra* n.119.

¹⁵¹ Sec.3, Government Draft Bill on Protection of Plant Varieties.

conversation and utilisation of plant genetic resources" held in Madras from January 28 to 31, 1994.

The government bill also applies to the appellate board. Both the draft bill as well as the Swaminathan draft is given in the appendix.

CHAPTER 6

CONCLUSION

If IPR laws in India are fastidiously developed and enforced. India might be a perfect centre for activities of analysis and development and clinical studies, with patent protection. Both domestic and world contract analysis organisations are viewing India because the hotbed for clinical analysis. Proficiency in English and skilled manpower, and availableness of huge patient volunteers is going to line the pace for unprecedented opportunities for domestic manufacturers.

History is not a series of discontinuous events; the future is systematically connected to the past. New laws and technologies are not deployed in vacuum. Rather, they are introduced into a particular set of social, economic and ecological circumstances with established and knowable trajectories.¹⁵²

United States of America is the first country to grant some kind of plant variety protection had a history of non-existence of both plant germplasm and

¹⁵² Kloppenburg Jr Jack Ralph, First the Seed, Cambridge University Press, Cambridge, 1988. p.4

genetic diversity. The sheer need for survival made the first settlers in North America experiment with and test the adaptability of various crops. Farms there were on a large scale and the propertied elite ensured institutionalisation of informal experimentation. The vagaries of natural history assured agriculture a position in research equal to that of industry. There was an enormous market for exotic crop species and varieties. Entrepreneurs saw large returns from investments in research. But research had to be secured. There had to be proprietary rights. So it came the plant variety protection laws.

In Europe, the end of colonization signalled a non-availability of plant germplasm and a break in the steady supply of agricultural produce. History repeated itself. A market grew for new plant varieties and there arose the need for applied research and safe investments. Plant variety protection laws were again framed. This time of course in the likes of UPOV.

Visualising the world as a market requires larger investments in research and development. Uniform laws internationally make trade a lot easier. TRIPs or trade related intellectual property rights were framed with this goal. To be in conformity with TRIPs India requires to either providing for plant patenting or at least frame a sui generis law for protecting plant varieties. But historically India has been a land of marginal and small farmers. Endowed with a rich genetic diversity and a variety of plant species experimentation came naturally to people. Being keen observers Indian farmers had solutions for vagaries of nature.

But an ever-growing population has stepped up the demand for farm productivity. Laboratory research and the green revolution ensured higher wheat produce and monoculture in Punjab. To prevent a Punjab repeating itself elsewhere in the country in the terms of monoculture and in order to fulfil the TRIPs obligation a sui generis legislation for protecting plant varieties should be framed keeping in mind the needs of both the farmers and the breeders. Such legislation contain the following rights for farmers:

- (i) The right of farmers to reproduce modify and exchange seeds and plant material.
- (ii) The right of farmers to ownership of biodiversity.

- (iii) The right of farmers to information.
- (iv) The right of farmers (community/individual) to payment (compensation), in cases where any breeder has used the said farmer's (farmers') plant variety to breed any other variety.

Breeders' rights comprise of the following:

- (i) The breeder has the exclusive right to offer for sale and sell plants of the variety protected.
- (ii) The breeder has the exclusive right to license other persons to sell reproductive material of the plants of the variety protected.
- (iii) The breeder has the exclusive right to produce and aswell authorise and license the production for the purposes of commercial marketing of the reproductive or vegetative propagating material or the plant itself.

Biodiversity conservation and how to go about it should be dealt with in a separate Act.

Among the various objections raised in India against a UPOV modelled law for protecting plant varieties, has been that the costs of testing, approval and acquiring an UPOV authorised Breeders Right Certificate would be around Rs2 to 3 lakh at least.¹⁵³ In this regard, there could be collaboration between ICAR and the National Law School of India University to lower the costs of acquiring a plant breeder's certificate. Strains identified by the scientists at the universities could be filed for protection at minimal costs.

Lastly, the Community Gene Fund as mentioned in the earlier chapter finds a prominent place in the government's draft bill.¹⁵⁴ But no proper utilisation of such a fund would be possible unless there is an elaborate identification of the existing plant varieties in this country. Without this any talk of plant variety protection is impossible.

¹⁵³SahaiSuman. "Protecting Plant Varieties: UPOV should not be Our Model", Economic and Political Weekly, Vol XXXI, Nos.41 & 42, p.2788.

¹⁵⁴ Sec 18, Government Draft Bill, Outline of the Legislation on Protection of Plant Varieties.

A critique has been made about the two draft bills and the suggestion has been made to incorporate several suggestions made in the Swaminathan draft in the Government bill. It has also been suggested to clearly enunciate the farmers' right over the breeders' right for claiming a part of the royalty. But since farmers' rights would be essentially collective excepting those stated earlier in the conclusion a National Gene Fund is required to be constituted with a separate fund management committee. The procedure for protecting the new varieties and the breeders' right also requires clear enunciation in the sui generis Act. The authority to be constituted must representative character and should not be something in the line of a patenting authority.

If the suggested provisions are taken care of India would be one of the first counties the farmers' rights without neglecting the breeders' rights and provide the balanced intellectual property protection regime for the farmers.

Recommendations

Intellectual Property is integral to the progress of humankind and an important component within the economic development in a very global surroundings and then it's essential that its utilization conjointly assures protection of basic human values. Advantages of intellectual property ought to transcend equally to creators and users while not distinction or discrimination of any kind and also the deployment of resources ought to be directed in such a way therefore as to guarantee civil rights among nations to relish the fruits of knowledge primarily based progress.

Some suggestions are given below so as to preserve the rich biodiversity of the earth and at constant time encourage inventors by protective their intellectual property.

- a. The expansion of IPRs into the realm of biological material should be restricted
- b. Traditional farmers should be allowed to continue to save and exchange seeds that they have harvested.

- c. To protect Traditional Knowledge and prevent its piracy, it must be documented at the earliest and it must be recognised as the property of the respective communities.
- d. A proper mechanism for sharing the benefits arising out of commercial exploitation of biological resources using Traditional Knowledge must be instituted.
- e. The TRIPs agreement should provide that a member country should require anyone wanting to make an application for a patent relating to biological material or Traditional Knowledge to disclose the source and country of origin and evidence of prior informed consent of the relevant national regimes.
- f. A substantive review of TRIPs must be completed and it should seek to harmonise the TRIPs with the CBD.
- g. The Indian Patent Act must be amended to make abuse of Intellectual Property Rights a ground for revoking the patent.
- h. An international, legally binding protocol must be developed and adopted to control the release of genetically engineered mechanisms into the environment.

Effectiveness of *sui generis* system of plant variety protection has become contentious in the absence of its definition in Trade-Related Aspects of Intellectual Property Rights (TRIPS) Agreement. India legislated the *sui generis* law, the Protection of Plant Variety and Farmers' Rights in 2001 and notified its rule in 2003. However, the Act is yet to be enforced. Effectiveness of legislation depends on the clarity and scope of its legal provisions, associated rules and regulations. The manner in which these are implemented also contributes to the effectiveness. An examination of this Act and its rules by applying certain *de minimis* requirements essential to ensure effectiveness of an IPR system concludes that the Act is effective in design and scope. Certain omissions in the rules may affect this effectiveness. The Act, apart from being effective under the flexibility allowed by TRIPS Agreement, also harmonizes other national commitments India has from international agreements on domestic biodiversity, plant genetic resources for food and agriculture, economic,

social and cultural rights, human rights and right to development. The potential of this legislation in spurring private investment in Indian plant breeding, strengthening seed industry and making available quality seed to farmers for achieving all round agricultural development. The Act may facilitate enhanced private investment in selected crops and seed supply systems, while strengthening of public research is imperative to achieve balanced agricultural growth and access of technology to farmers at competitive cost.

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