

CHAPTER 3

Farmers' Rights

Introduction

Farmers Rights is a concept that has been discussed for the past two decades. In this chapter the origin of the concept, the transformations in the discourse on Farmers' Rights are discussed. The various ideas and proposals to actualize the same are also examined. In this chapter a detailed analysis of the national laws on Farmers' Rights is not provided as the discussion focuses on Farmers' Rights in theory and practice at a broad level and the issues relating to IPRs and Farmers' Rights are examined. In this chapter the discussion is on Farmers' Rights and this excludes the indigenous communities rights as Farmers and conservers of germplasm¹ so as to develop a clear cut and focused approach on Farmers' Rights.

Farmers' Rights: Its Origin and Development

Farmers' Rights as a political idea was articulated by Carry Fowler and Pat Mooney in the mid eighties. But as Fowler himself points out the notion was much older and was born out of the realization that while modern plant breeders are being rewarded for their contributions the farmers who have played and continued to play a vital role in conserving germplasm and their innovations are hardly rewarded nor are they recognized for their invaluable contributions.² It is easy to dismiss such contributions as handiworks of amateurs or not creative when compared to plant breeding.³

But over the past four decades or so an ever growing literature has demonstrated that the farmers' are neither amateurs nor can be termed as unscientific. The literature recognizes that farmers innovate now and the genetic diversity of the developing nations is not simply a gift of the nature or can be attributed to evolution alone.⁴ But farmers do what plant breeders

do except to apply for IP rights. They had contributed the base for modern plant breeding which would not be able to create new varieties but for the germplasm conserved by the farmers.⁵

The term Farmers' Rights was increasingly used in debates within FAO on the distribution of the benefits of the plant genetic resources. A plant breeder gets returns on a commercial variety on the basis of Plant Breeders' Rights (PBR) but there was no similar mechanism to provide an incentive for the providers of germplasm, so that they could continue to maintain and make available these resources.⁶ As a result of these debates there was a compromise, and both Farmers' Rights and Plant Breeders' were recognized and were incorporated in the resolutions of the FAO Conference 1989.⁷

A reading of the above resolution shows that Farmers' Rights is not a concept that takes into account the past only, rather it takes into account the present and future and is a dynamic concept that talks of the present and future contributions as well. But since 1989 nothing much has been done to translate these principles and ideas into practice and as a result the establishment of a financial mechanism to assist farmers or to reward them for conservation of plant genetic resources is still a distant dream. Although the idea of Farmers' Rights was expressed in Rights discourse, it did not intend a property oriented approach. Rather what was intended was a call for creating a global Fund that would act as a funding mechanism.⁸ In this context plant genetic resources should be viewed in a broader context, not just the germplasm in gene banks or varieties under cultivation.⁹

As outlined elsewhere in this thesis with reference to the developments over Convention on Biological Diversity and International Undertaking on Plant Genetic Resources, the debates over Farmers' Rights took a different turn and the protracted negotiations over IUPGR resulted in the conclusion of a revised International Undertaking in 2001 only. But between 1989 and 2001 there were many developments which necessitated

changes in IU. In 1992 the Convention on Biological Diversity was signed. Hence the need to harmonize IUPGR with CBD arose and in 1994 it was stated that the objective was to harmonize the Undertaking with CBD and to consider issues of access to PGR and realization of farmers' rights.

In 1999 it was agreed that "the responsibility for realizing Farmers' Rights rests with national governments".¹⁰ This was certainly a departure from the earlier view that the International Community acts as a trustee or Farmers' Rights being vested with that. In other words it is now left to the national governments to take measures to protect in accordance with 'their needs and priorities'.

Thus it has been made clear that benefit sharing and farmers' rights are not linked. And it is the responsibility of national governments to initiate efforts for realizing these rights and there is no binding convention or international mechanism which would spell out explicitly what exactly are the Farmers' Rights and how they would be implemented. Many nations have passed laws or have taken steps to realize Farmers' Rights.

Farmers' Rights the Changes in the Debate and the Consequences

Although the debate on Farmers' Rights started with the realization that Farmers as germplasm providers and conservers are not getting their due share or recognition there has been a change in the terms of the debate. At first it was articulated as an issue of compensation but later it was considered more as a question of rights. The idea of Farmers' Rights as Intellectual Property Rights was not acceptable to industrialized countries that were also not very comfortable with the idea of contributions to the Fund. Questions relating to methodology for determining the contribution of landraces to finished varieties, or contribution to each country to the germplasm were raised.¹¹ The question of international flow of germplasm and the importance of germplasm from abroad was also raised to drive

home the point that compensating farmers or contributing to a Fund would be a difficult proposition to justify.¹²

NGOs which were arguing for Farmers' Role also realized that promoting Farmers' Rights as a form of IPR would not be very successful as it would be difficult to realize them as IPR in practice. Moreover with IPRs becoming a matter of contention in GATT Talks and with revision of UPOV Convention in 1991 it became clear to them that the focus should be more on resisting the onslaught of TRIPS and to protect the rights enjoyed by farmers than to press for an IPR or for compensation. They also realized that Plant Breeders Rights or protection for plant varieties would become inevitable once the agreement on TRIPS is established. Hence there was a hue and cry about farmers losing their right to save seeds under TRIPS. Another factor which necessitated this change was the view held by many of the critics of the western intellectual property rights systems that such systems are not suitable for protecting collective or community rights and hence advocating another similar IPR system in the name of Farmers' Rights would become counterproductive. As argued elsewhere the need for harmonizing IUPGR with CBD arose and the IUPGR was revised accordingly. And CBD recognized the rights of nation states over biodiversity and had provisions relating to benefit sharing, access, recognizing indigenous knowledge etc. Further it was also suggested that soft laws, Traditional Resource Rights and legal recognition for community rights and legal mechanisms for safeguarding farmers' rights over seeds are some of the options available. The pros and cons of these approaches have been discussed in the chapter on indigenous knowledge. Hence the issue although was articulated first in terms of compensation it no longer remained an issue of compensation but became an issue of rights. This change is reflected in both the laws and in the views put forth by developing nations in WTO.

In the mid nineties two different streams of thought emerged on nature and scope of Farmers' Rights. The crucial question was whether it was just an abstract idea or whether it was a legal right. For some nations it was preferable to view Farmers' Rights as a concept and not to consider that as a legal right that could bestow rights on farmers. But for some other nations Farmers' Rights was more than measures to be taken by FAO and states for conservation and it included a set of policies with objectives. These nations pointed out several aspects of the Farmers' Rights that should be legally protected and guaranteed.¹³

Farmers' Rights: Political Concept or a Legal Concept

Farmers' Rights can be viewed as a political concept or as a legal concept or as a combination of both. When considered as a political concept it becomes a matter of non-exclusive right and right to compensation or reward by the international community through an international funding system.¹⁴

As a legal concept Farmers' Rights is an alternative form of Intellectual Property Rights that enables farmers to not only conserve plant genetic resources and cultural and agricultural practices pertaining to the same but also the right to continue seed saving and seed exchange practices. These are considered as rights and not as exceptions permitted by law or privileges granted as exemptions. As a legal concept the farmers' right could also include the right to conserve germplasm and the right to develop varieties based on the varieties which farmers are cultivating.

There is a wide variety of opinion on the scope of Farmers' Rights and the rationale for it. Stephen Brush has been arguing that Farmers' Rights is a group rights, and links that with the collective interests of farmers and for encouraging nurturing, conservation and improvement of plant genetic resources.¹⁵ He also argues that it is not a means to create licenses for access or for commercializing crop genetic resources. Further Farmers' Rights in his view are not rights of some specific farmers but rights of farmers' who have collective

interest in germless conservation and improvement. He is in favor of in situ conservation. He is of the opinion that conservation should be emphasized as it is less controversial and less troublesome than equity as a basis of farmers' rights. His views are based on his support for the Common Heritage of Mankind perspective on plant genetic resources and his emphasis on the importance of in situ conservation and farmers' role in both conservation and improvement. Viewing farmers' rights as a group rights has got some advantages as such a perspective does not limit realization and implementation of farmers' rights to national level or leave it in the hands of national governments. Hence it is no wonder that he favors using funds created through farmers' rights for promoting in situ conservation. Further such a perspective is sensitive to the global dimensions of conservation and improvement of plant genetic resources. But with Common Heritage of Mankind perspective being rejected by both North and South and by many NGOs who are vocal on this issue such views does not get the support they deserve. But as Brush points out the interdependence of North and South on plant genetic resources is a reality and farmers in both North and South have a collective interest in the plant genetic resources. Farmers' Rights has also been interpreted in such a way that it is posited as reconciliation between the interests of the "technology-rich" and "gene-rich" countries.¹⁶ This perspective ignores the fact that the division – technology –rich and gene-rich is false as some countries are rich in both and some are poor in both. For example countries like India, Brazil are rich in both genetic resources and technology and are capable of using biotechnology as well as modern conservation technologies. But there are many African countries which are poor in both. Further what is meant by an equitable system is an open question. Is the current system of making available plant genetic resources through the International Agricultural Resource Centers an equitable system?

And availability of plant genetic resources is a question of many issues not just Farmers' Rights. In other words the recognition and reward system may well be a mechanism

be ensure that valuable genetic material is supplied at minimum cost or at no cost with some little money or resources allocated for in situ conservation without making the system really equitable. The basic problem is that once it is viewed as a compromise or as a method of reconciliation the rationale for Farmers' Rights is lost as an independent cause and becomes a subservient mechanism in the global arena where the nation states decide the rules of the game. Thus instead of becoming a subversive notion that questions the current intellectual property regimes and modes of germplasm transfer and utilization it is turned into a tame affair, just a matter of Funds and access. It is worth noting that notwithstanding the views expressed regarding the operative concept, the Global Plan of Action has not resulted in any major gains for Farmers in terms of Farmers' Rights nor the Funds have become a force to reckon with. Instead as discussed earlier under the IUPGR the implementation of Farmers' Rights is now left to the national governments and is no longer held under the Trusteeship of International Community.¹⁷

M.S. Swaminathan, points out that there is a consensus for about two decades on the need for recognizing and rewarding the farmers for their contributions in plant genetic resources conservation, there is no methodology which is agreed internationally¹⁸. But the problem is not just the absence of an accepted methodology as Farmers' Rights is viewed or justified very differently. For instance Jill Lane had suggested that in view of the large numbers of farmers involved in on-farm conservation it would not be possible to compensate all conservation activities through Farmers' Rights and hence only a limited number of conservation efforts can be supported.¹⁹ Is Farmers' Rights only a concept or a system that can be put to use. It is easy to consider that as a moral obligation that would be fine in paper but difficult to implement and hence may not fulfill expectations of the users and providers of germplasm.²⁰

The point is although Lesser argues that free access is not no price access but open access and favors incentives in support of in situ conservation he views Farmers' Rights more as a concept than as an operable system. But advocates of Farmers' Rights view this differently and argue for a comprehensive view including Funds.²¹ Some others view Farmers' Rights as a very broad set of rights which put them at the center of activities relating to seeds and germplasm.²²

This view sounds very romantic and views Farmers' Rights as a bundle of rights. But in reality such rights are constrained by rights of others like Plant Breeders. Further access to information or knowledge is not free but is subject to conditions. Moreover the freedom to control and develop their own farming systems is too idealistic for farmers are just a part of the society. In many developed nations farmers are seen as a component of the food system and they are so dependent on others for their inputs and services, so much so, that an independent farmer is more a myth than a reality. In developing nations too farmers are no longer independent as they were earlier when it comes to inputs or services. Hence such broad claims over farmers' rights are out of sync with reality but the intention behind him needs to be understood.

According to Starr and Hardy the idea of Farmers' Rights could be understood in two different ways. Initially it was understood in the context of right of traditional farmers and forest communities for compensation for plant genetic material that was collected by scientists in the North. But governments of developing nations have adopted the term, seeking compensation, as plant materials used for breeding modern varieties was provided at no cost. And the recent understanding does not include farmers or forest communities in matters relating to compensation.²³

The report of the Commission on Intellectual Property Rights (2002) favors a system of farmers' rights as 'an important counterbalance to the rights accorded to breeders in the

formal sector under PVP or patents'. It suggests that at the national level implementation of farmers' right should include:

- (a) protection of traditional knowledge relevant to plant genetic resources for food and agriculture;
- (b) the right to equitably participate in sharing benefits arising from the utilization of plant genetic resources for food and agriculture; and
- (c) the right to participate in making decisions at the national level, on matters related to the conservation and sustainable use of these resources.²⁴

Thus despite all the various definitions and perspectives Farmers' Rights could be understood as a legal claim which is to recognize and reward the farming communities and to promote in situ conservation.

Farmers' Rights and Intellectual Property Rights

According to one author Farmers' Rights are 'not however, intended to compete with or replace, existing intellectual property rights'.²⁵ But the nexus between Farmers' Rights and Intellectual Property Rights is worth examining as it has been argued that the discussions on Farmers' Rights have pointed out the fact that while Plant Breeders enjoy Plant Breeders' Rights which is a form of IPR but Farmers' enjoy no such right. Further over the past few decades farmers in many developed countries have lost their customary rights like right to save seed, sell such seed or exchange it. As plants are subject to double protection – both patents and Plant Varieties Protection in countries like USA farmers have little control over seed. And development of technologies like Genetic Use Restriction Technologies (GURT), popularly known as Terminator technology, is to ensure that the farmers depend upon seed companies or others even to make their seeds germinate. These technologies are protected under IPRs. Further developments in both agricultural technologies and IPR regimes affect

the Farmers' Rights in more than one way.²⁶ There is a wide variety of opinion on the relationship between Farmers' Rights and Intellectual Property Rights.

According to one view Farmers' Rights and IPRs are distinct and differ so much that there is hardly anything common between them. Hence it is argued that as they differ so much it is better not to conflate both and it would not be preferable to bring Farmers' Rights under IPRs as the idea was to counterbalance IPRs and not to supplement them or extend the scope of IPRs.²⁷

It is worth pointing out that the concept of Farmers' Rights is not a retrospective award but an incentive for continuing germplasm conservation and enhancement. Further while it is true that land race cannot be uniquely to a specific place, it is often possible to identify a particular community or communities that have contributed as many land races or varieties are endemic to a region or area. Moreover plant genetic resource collectors often collect varieties from different locations but also record the place of collection also.

But that data may not be accurate or not available. It has been argued that communities can be considered as inventors and are eligible for IPR protection for their innovations.²⁸ The pros and cons of such ideas have been discussed in the chapter on indigenous knowledge.

In many national laws Farmers' Rights is recognized in laws pertaining to Plant Breeders Rights.²⁹ But it is also possible to institutionalize a sui generis regime on Farmers' Rights, apart from the existing forms of IPRs. But Farmers' Rights themselves may not be Intellectual Property mechanisms. Rather Farmers' Rights could be protected as a bundle of rights with a separate funding mechanism and initiatives to support in situ conservation. Another option is to extend the definition of plant breeders' rights for protecting Farmers' Rights. Thus it is possible to reconcile the interests of both plant breeders and farmers in a single law with specific definitions on Plant Breeders' Rights and Farmers' Rights.

But the question is in whichever way the Farmers' Rights is envisaged under law or through mechanisms for its realization will it be compatible under TRIPS. Under TRIPS article 27.3 (b) plant varieties are to be protected under patents, an effective sui generic system or a combination of both. Hence any law which is not compatible with this can be challenged as non TRIPS compliant. Many developing nations have made proposals for review of article 27.3(b) and have argued that indigenous knowledge and farmers' rights should be considered while interpreting the scope of the 27.3(b).

But an important question is that whether Farmers' Rights should be recognized as Intellectual Property Rights for putting the concept into practice. Further according to some critics of IPRs are inimical to the notions of community rights and collective rights. In view of the many difficulties, both conceptually and practically it may be preferable to realize Farmers Rights under a mechanism which is similar to IPR regime but not exactly an IPR regime.

For instance it has been suggested that Farmers' Rights could be realized through a mechanism similar to copyright claims and it should be an open access system.³⁰ This idea has some advantages as for both folklore and copyright claims there are laws that could be used creatively for modeling a law to implement Farmers' Rights. But there seem to be no law which has been enacted on this basis. Another suggestion which has been put forth is that to evolve a concept of uniformity which is broader than the norms accepted under UPOV Plant Breeders' Rights and provide protection under this criterion³¹. While this approach seems attractive the major drawback is that it may not be acceptable to Plant Breeders. In addition to this, having two different norms for providing protection to plants will be difficult to defend legally. Whether such a system will be considered as a part of sui generic system under TRIPS is another question which has to be examined. It has been suggested that farmers' rights can be enacted in more than one legal context³². Some other suggestions

include: Developing Farmers' Rights as IPRs balancing the power of commercial breeders³³. Farmers Rights as a community intellectual right but not as a IPR.³⁴

Another approach can be evolved on the basis of the necessity for Intellectual Property Rights. IPRS are necessary as an incentive for innovations and to promote creative activities and inventions. The IPR regimes justify exclusive rights on this ground and the periods of exclusive rights vary with respect to the type of Intellectual Property Rights. Based on the above argument it is suggested that a regime for implementing Farmers' Rights as a mechanism to promote innovations and creativity in utilization and sustainable application of plant genetic resources can be considered. It could be funded on the basis of a levy on seeds or selected agricultural produce and could be used for promotion of innovations while giving protection to farmers who innovate. The outline for a similar system based on Open Source model is given elsewhere in the dissertation. A system which would confer rights over new varieties developed by farmers and which is similar to plant breeders' rights has also been suggested.³⁵ Elsewhere in this dissertation conceptualizing farmers' rights on the basis of users' rights has been discussed.

In many developing nations laws relating to Plant Variety Protection have been enacted only in the recent years, that too after TRIPS agreement. At the same time they are aware of the necessity and relevance of Farmers' Rights and the need to provide for them. Thus finding a balance between Plant Breeders Rights and Farmers' Rights is not an easy task. It is worth pointing out the laws enacted in developed nations does not include Farmers' Rights as their objective. Their focus is on providing right for Plant Breeders and over the years the scope of plants eligible for protection has only increased and double protection has become the norm. Post UPOV Convention of 1991 the Plant Breeders Rights have become more expansive in nature with many exemptions for research or for saving and exchanging seeds being taken away either by laws or by court decisions or by both.³⁶ As a result the

developing nations have to take into account Farmers' Rights even as they enact laws on Plant Breeders Rights. For example laws in developing countries try to include equitable sharing of benefits from plant genetic resources, protection for traditional or cultural practices relating to conservation and recognize rights of farming communities or indigenous communities. But to what extent these attempts will succeed is a debatable issue.³⁷

In many developed nations patents are becoming the de facto standard of protection for plants and plant varieties and the Plant Variety Protection Certificates are becoming less important. Court decisions and laws have upheld the rights of plant breeders or seed companies when it comes to exchange of seed or seed saving practices. In any case in most cases where hybrids are the norms the farmers have very few options left with them. Thus the question of Farmers' Rights is irrelevant for most farmers in developed countries. It is most likely that the seed MNCs would prefer a protection that is better or stronger than what is being offered by laws in developing nations which are similar to Plant Variety Protection Certificates and which often have a lesser period of protection when compared to patents. Further when it comes to hybrids and seeds developed biotechnology it is doubtful as to whether will have any other choice other than to buy them season after season to get the same yield. In many developing nations public sector which is a dominant player in both seed production and development of varieties is witnessing declines in investment and is encouraged to cooperate with private sector.

While a detailed analysis is beyond the scope of this chapter the importance of these developments for Farmers' Rights cannot be overlooked. But as a compromise if the developed nations and seed MNCs allow some flexibility for developing nations in developing sui generis systems that recognize Farmers' Rights and act as a balancing mechanism between Plant Breeders Rights and Farmers' Rights we may witness many sui generis systems evolving out of the experience and ideas gained from implementing the laws.

Thus the future of Farmers' Rights is not just a question of laws but also that of technology and developments in international fora particularly in WTO.³⁸

Thus there are many suggestions on the designing systems which are conducive to Farmers' Rights and which are based or modeled after IPR regimes but not as full fledged IPR regimes. Such quasi IPR Regimes can be used to ensure that Farmers' Rights are covered by laws and act either as rights independent of IPR regimes or as part of IPR regimes or act as systems that act as counterbalance to IPR regimes.

Which is a better method or system is an issue which has to be debated and decided at the national level because seed systems, laws, production and distribution mechanisms differ widely across countries and even within a country there is a variance with respect to crops. However it is essential that the national laws and systems should complement the efforts at the international level in terms of funding mechanism for encouraging in situ conservation .An ideal solution will be to have funds at the National level for promotion of conservation of plant genetic resources and support from international community in terms of technical cooperation, funds and development of conservation measures that will benefit both the country and the humankind.

The Content of Farmers' Rights and Right Holders

For Farmers' Rights to be effective, instead of remaining a vague idea it is essential that there should be some clarity regarding rights and obligations regarding this. It is easy to envisage the contents of Farmers' Rights without the corresponding obligations of others to farmers. But who are the others. The concept of Farmers' Rights has undergone a sea change during the last twenty years. Now it is clear that the national governments will be the primary agency for implementing or realizing this and the international community has left this subject to the laws of the nations. Thus it is the obligation of the national governments to put this into practice. But national governments have sovereign rights over plant genetic

resources under Convention on Biological Diversity and they can always point out that Farmers' Rights is subject to WTO TRIPS, CBD and IUPGR.

One way to spell out the content of Farmers' Rights is to recognize the right of farmers in the following:

1. saving and exchanging seeds
2. access to technologies
3. continuing traditional or customary cultural/agricultural practices relating to in situ conservation and propagation
4. experimentation and innovation and
5. participating in decision making and in evaluating technologies pertaining to agriculture or conservation of plant genetic resources and this includes the right to reject technologies that are not acceptable to them.

But there is no agreed and clear cut definition of Farmers' Rights and its content. Rather it can be inferred from that from the laws and submissions made by governments on TRIPS article 27.3(b). Countries can enact their laws on the basis of UPOV Convention, with the revised 1991 version being the most recent. Thus the scope and nature of Plant Breeders Rights is well settled and is established in both theory and practice. The implementing mechanism has been in place for many decades. With the expansion of the scope of Plant Breeders Rights over the past few decades by both laws and by decisions given by courts by now there is no doubt about the scope and nature of protection available to Plant Breeders. But in case of Farmers' Rights there are many ambiguities regarding its nature and scope. There is no body like UPOV when it comes to Farmers' Rights. And most of the contents regarding Farmers' Rights have been customary practices rather than rights granted by specific laws. It is needless to repeat the fact that at international level Farmers' Rights has been a controversial subject and is often regarded as an opposite of or countervailing force of

Plant Breeders Rights. Hence it is no wonder that national laws define the nature and scope of Farmers' Rights in many different ways, depending more upon the national contexts and policy frameworks than on the basis of any International Convention or Undertaking. Again implementing Farmers' Rights is left to the will and pleasure of the national governments. A sui generis system that is compatible with TRIPS need not even provide for Farmers' Rights. It is enough that it provides protection for plant varieties by patents or by a sui generis system or by a combination of both. Further even if there is a dispute since there is no mention about Farmers' Rights in TRIPS such a system will be TRIPS compliant as it meets the requirements of TRIPS Thus a sui generis system could ignore IUPGR or CBD but can still be compatible with norms of TRIPS.

On the other hand if Plant Breeders think that in the name of Farmers' Rights most of their rights have been diluted or rendered meaningless or the sui generis system does not provide adequate protection they could challenge the system before a WTO Panel. Since so far there has been no dispute on this it is too early to predict how the provisions of TRIPS will be interpreted. But a look at the submissions made by developing countries to TRIPS Council on article 27.3(b) indicate that they prefer a system which also takes into account Farmers' Rights and benefit sharing. Thus there is a wide variance between the perspectives of developing nations and nations which have implemented Plant Breeders Rights or which have adhered to UPOV norms for protection. An issue which is the bone of contention is the harmonization of TRIPS with CBD. Some countries have argued that there should be a harmony between the both and this harmonization is a must for their implementation at the national level. With reference to CBD since it affirms the sovereign rights of the nations over their natural resources and as the implementation is left to the national governments it provides them enough powers to regulate access to genetic resources and to regulate or oversee benefit sharing mechanisms. Under TRIPS they have an obligation to provide

protection for plant varieties. Hence it is argued that harmonization is necessary for implementation of both at the national level. This has been the position taken by India. Many developing nations have taken a similar position But USA has argued that both TRIPS and CBD provide for enough flexibility for implementation at national level and hence such a harmonization is not necessary. Of course there is another question the (in) compatibility of TRIPS with other Multilateral Environmental Agreements and how to reconcile both if there were conflicts. The Africa Group has contended that TRIPS should be harmonized with CBD and IUPGR and has favored continuation of farmers' practices and protection of community rights. Similar stand has been taken SAARC group. At this stage it is appropriate to point out protection of indigenous knowledge or communities' knowledge or community rights need not necessarily be in conflict with Farmers' Rights, nor they, mean the same. It is better both theoretically and for practical purposes, to differentiate both and deal separately. Farmers as a group and Indigenous People or Communities as a group need not necessarily have same interests. In many countries Indigenous People have a different history, cultural and traditional practices that set them apart from farmers. Unfortunately when there is a tendency to mix up both or club them together it does not bring in the much needed clarity. For example in case of Europe and USA the Farmers' Rights do not get the same attention compared to rights of communities and indigenous people. In countries like India although there is an overlap, the interests of indigenous communities and farmers are not the same. Yet both lawmakers and academics club these together because of the nexus between CBD, IUPGR and TRIPS. Obviously there is no provision for Farmers' Rights in TRIPS. It has been suggested that the Article 27.3(b) be revised to include Farmers' Rights and thus make it in harmony with CBD and IUPGR.³⁹ But as discussed earlier this proposition is controversial and has not been favored by USA. USA has suggested that sui generis option be eliminated. Another option is to define sui generis system as one that is compatible with UPOV

Convention. But as there is no accepted definition of what is meant by 'effective sui generis' system much depends upon the talks on the revision of TRIPS. Although it is too early to predict the outcome, all that can be said now is this is going to be as controversial as, if not more, of the linkage between TRIPS, Public Health and access to drugs. Having said this it can be pointed out that both USA and EC have always pushed for a TRIPS Plus regime, i.e., an IPR Regime which is stronger than what TRIPS provides in the trade agreements they have entered with individual countries.

Realizing Farmers' Rights

As indicated earlier the concept of Farmers' Rights is a nebulous one and so are the components of Farmers' Rights. Irrespective of this attempts have been made to realize Farmers' Rights through laws. But defining the right-holders of Farmers' Rights is not an easy task. This is because while farmers denotes a broad community globally not all farmers are conservers of germplasm and not all farmers need the support of Farmers' Rights in one way or other. Only a small percentage of population in developed nations depends on farming for livelihood and among them there are big farmers and corporations. Hence the list of possible right holders will vary depending upon how one defines the Farmers' Rights and the coverage of Farmers' Rights. The following could be possible right holders:⁴⁰

Informal plant breeders from developing countries

Landowners where PGFRA are conserved and developed, if different from plant breeders

Farmers located in the centers of diversity of PGRs

Indigenous and rural communities

Individual farmers, where identifiable

Traditional small farmers

National states

Although list can be limited to farmers in developing nations that does not take it far, since not all farmers located in the centers of diversity of PGRs are small farmers or engaged in conservation of plant genetic resources or are using traditional agricultural practices. Thanks to green revolution and other developments many farmers big or small have switched over to modern varieties or have become contract farmers or have abandoned traditional agricultural practices. So whether it will be appropriate to consider them as right holders is an important question. Moreover Farmers' Rights are a right that pertain to farming communities for their contributions or to groups or to States and it is difficult to pinpoint specific farmers unless they are engaged in conserving plant genetic resources. Another issue is that even in communities not all farmers contribute equally or contribute at all to conservation of PGFRA. In fact it is possible that except some many others might have little or no interest in conservation or innovation or in traditional agricultural practices.

Moreover it is almost impossible to identify the exact contributions of each community or collective entity in farmer-bred varieties or in land races. But at the same time irrespective of their contribution or involvement in conservation of PGFRA all farmers can be deemed to be eligible to have Farmers' Rights, either in part or in full, depending upon the definition and contents. Another suggestion is that a levy or royalty could be collected on seeds traded and this could be used to fund conservation projects or grassroots conservation and setting up specific projects for conservation on traditional varieties that are in danger of becoming extinct. But the issue is on what basis the levy or royalty is to be charged and how to distribute them to communities or to projects. And such a measure may not be of much help as farmers or communities face other problems as well.

For example if it economically beneficial to switch over to modern varieties what sort of incentives would be required to make them conserve PGFRA or continue to use traditional agricultural practices and what are the benefits and trade offs for a community to practice in

situ conservation. One possibility is that these funds will result in setting up of a bureaucracy with little benefit to farmers or communities.⁴¹

Another opinion is that Farmers Rights represent public interest and are linked to production and distribution of public goods, while Plant Breeders Rights are private rights. Hence Farmers' Rights should be discussed in the context of biodiversity and conservation of biodiversity. Hence it is suggested that a levy be collected from the global seed sales to mobilize funds for realization of Farmers Rights.⁴²

Although some such proposals have been made in different contexts they failed to elicit a favorable response from the seed industry which is not favorable to the idea of Farmers' Rights as a concrete right.⁴³ It has been argued that the amount generated from such levies on Plant Variety Protection Certificates (PVP Certificates) would be inadequate to fund agro-biodiversity conservation and the Fund envisaged under IUPGR also requires a cumbersome and expensive monitoring system.⁴⁴

But a question that has to be faced is to whether countries should press for a royalty based regime or should they opt for a system that facilitates maximum benefit from sharing plant genetic resources. The interdependence of countries for plant genetic resources has been discussed elsewhere in this dissertation. A study taking common beans as an example points out that receiving royalty payments need not be an optimum solution.⁴⁵

This study shows that not all countries in the south benefit from such a mechanism and the productivity gains are far greater than what they could get as royalty payments for owning germplasm. In other words it is better to invest more in research and development and in conservation and gain from such measures than to expect any gain from royalty payments. The study highlights the fact that issue of establishing a Fund and collecting royalties for ownership is far more complex than what it appears prima facie. Moreover there is no guarantee that royalty amounts would be regular or even over a period. And given the

difficulties in assessing the value of germplasm it does not make sense to expect that royalties will be sufficient to fund conservation or to compensate the farming communities.

Thus implementing Farmers' Rights need not be coupled with a Fund based on royalties. So instead of waiting for a Global Fund that would support Farmers' Rights through payments from royalties national governments may well be prepared to undertake activities relating to Farmers' Rights through their own efforts. Of course this does not mean that they should abandon any effort for a global Fund. Rather it is suggested that even as they strive for it and try to evolve a free access (but not a free of cost access regime) based on IUPGR and CBD. They should focus more on developing their own plans for conservation of PGFRA at the national level and support for farmer led conservation efforts and grassroots conservation and extend support for Farmers' Rights through legal measures and other appropriate steps than expecting that much money would come of measures under IUPGR.

Farmers' Rights can be implemented by a sui generis system which includes protection for plant breeder and farmer varieties and different types of protection can be given. Elsewhere in the dissertation the criteria for protection and how this has been defined by UPOV and by national laws has been discussed in detail.⁴⁶ For farmers varieties it is possible to have a definition that is limited and less demanding than what is required for Plant Breeders Varieties. But it has been pointed out that criteria for registration of Farmers' Variety as envisaged in the India's Law on Farmers' Rights and Protection of Plant Varieties and the right granted for the same are not clear.⁴⁷ The protection can be extended to a variety as such and not to its components or genetic characteristics or to any specific gene. But as it has been pointed out countries can recognize more than one category of variety through law(s) to protect interests of various actors and institutions.⁴⁸ But whether such attempts will result in confusion and would facilitate 'anti-commons' is an interesting issue. As the very idea of Farmers' Rights is subject to many interpretations and defining Farmers' Varieties is

also a controversial issue the law making process in India, when subjected to pressures from various quarters' results in a law, which has many shortcomings. The Act is vague and unclear on Farmers' Rights and rights under Farmers' Varieties, despite lofty objectives.⁴⁹ The basic problem with the Act is it views Farmers' Rights more as concessions than as a bundle of rights and the view that state paternalism is best for farmers permeates the Act. Hence the Act creates more bodies and structures while the basic issues have not been answered satisfactorily in the Act.⁵⁰

As farmers varieties are results of collective effort and efforts over a period of time it is essential that rights given to one community should not result in monopolization of the variety or should not be against the interests of another community or community. Provision for charging a remuneration by the community for the use of the varieties by other communities can be provided by law. The legal system can also have provision of handling essentially derived varieties based on such varieties. However it should be noted that there are practical problems in identifying and categorizing such farmers' varieties for they may not meet the criterion of uniformity and stability. Further it may not be easy to prove or define novelty in such cases. In other words farmer varieties are less uniform and have less stability than what plant breeders offer. However it should be noted that it is this diversity that makes them valuable as a plant genetic resource and hence these should not be held against them to refuse protection. Rather it is possible to analyze farmers' varieties and categorize them. Moreover the idea of giving protection farmers varieties is two fold. One is to recognize their contributions and to confer rights. The second is to ensure that farmers' varieties are not misappropriated or used as the basis of new varieties without farmers being aware of them. Misappropriation can be prevented if farmers' varieties are recognized as such and are given protection. This does not mean that breeders are prohibited from using farmers' varieties. Rather it only means that plant breeders do not free ride on farmers' varieties. But

farmers and communities need access to varieties and germplasm from other farmers and communities and mutual exchange is common. Hence the law should recognize this and need not place undue restrictions on this. Another option is to ensure that farmers' varieties are protected by defensive patenting or a similar mechanism and thus misappropriation is prevented. By keeping it in the public domain and by declaring that while such varieties are free to use by other farmers or communities, subject to any restriction placed by the community that developed the variety it is possible to prevent any misuse or undue appropriation such varieties. Further the law could ensure that if any plant breeder uses these varieties without prior permission or informed consent of the communities or has deliberately given false information while seeking protection for a variety developed by the breeder, such a variety will not be given protection.⁵¹ By this it will be possible to prevent registration and protection of plant breeders varieties that are essentially derived varieties or varieties with cosmetic changes For this law should specify how farmers varieties are to be recognized, registered and what are the appropriation regimes available for farmers and communities. One way to identify farmers varieties is to identify them on the basis of location or geographical area and or, or in the basis of specific characteristics. For this an IPR regime similar to that of Geographical Indicators can be used. A detailed discussion on this is beyond the scope of this chapter.

When Plant Breeders Rights are recognized by law some exemptions can be granted to farmers who fulfill some criteria, as a part of Farmers' Rights. By this it will be possible to protect farmers' rights and customary practices without compromising on the rights of the plant breeders. For example a farmers' exemption may be granted to subsistence or small/marginal farmers', who can be identified on the basis of the size of the landholdings, to reuse seed or to exchange seeds or to sell seeds to their neighbors. But this does not mean that they should be permitted to produce seed for the purpose of sale only. European Community

Plant Variety Rights has some given some exemptions to small farmers. The revised UPOV Convention 1991 has further strengthened the nature and scope of Plant Breeders rights and the farmers' privilege has been substantially curtailed. It is now left to the national laws to define this privilege but only if they protect the interests of the plant breeder. But such an exemption is not possible if patents in plant varieties are also permitted apart from another form of protection. So as long as the sui generis systems do not provide for patents on plant varieties it is possible to provide such exemptions. But if the law permits exemptions for breeders and (selected category) of farmers even while permitting patents on plant varieties this is likely to be challenged. Unlike copyright there is no fair use provision under patent. And research exemption under patents is either very limited or is absent. So the question of farmers' rights is linked to the issue of protection for plant varieties in more than one way.

As a result it is not clear as to what extent such strategies will be relevant in implementing Farmers' Rights. The relevance of PGFRA is widely acknowledged but the required funding is not forthcoming. The North-South divide on this issue has relegated the Common Heritage Perspective and the issue has been viewed more as a question of intellectual property rights, markets, and rights of farmers and communities without a broader perspective that links conservation and sustainable use of PGFRA. The IUPGR and CBD have complicated matters further and today, after almost decades of debates and discussion Farmers' Rights is yet to be implemented in letter and spirit. The question of willingness to pay for in situ conservation is an important one. Although humankind as a whole may be the beneficiary of PGFRA to what extent each country should support in situ conservation is a question for which there are no clear answers. A country which is by and large self sufficient in food or has adequate germplasm for future research and development need not be interested in in situ conservation of land races and food crops which are not of importance to it. And since CBD is based on sovereign rights of nations it can be argued that they are

equally responsible regarding the obligation to conserve and promote sustainable use of PGFRA. In this context it is worth pointing out that since all nations are not equally endowed with PGFRA not all countries will be equally interested in in situ conservation. For example what interests India has or can have in in situ conservation of beans in Latin America. The question of under funding in situ conservation is a reality because contributions are voluntary and one nation can always free ride on others germplasm stored in gene banks and the germplasm being public goods will be under funded.⁵²

Hence it is likely that funding for in situ conservation may not be substantial and so it cannot be a significant source for realizing Farmers' Rights. So it is suggested that nations support in situ conservation and Farmers' Rights through generating internal resources. In view of the importance and continuing relevance of farmers contributions countries can pay farmers and communities who are conserving PGFRA monetary compensation for the opportunity cost foregone had they switched over to modern varieties or converted agricultural land in to land for use for other purposes. It can be argued that that the multi functionality perspective on agriculture could be used to justify such payments and such payments are included in the permissible subsidies under WTO AOA.⁵³

In situ conservation is not getting the support it deserves is also partly due to the fact that industrialized nations are interested more in promoting research and development in plant breeding in the hands of private sector and the farmers are supported more through subsidies than through public sector taking the lead in seed supply. For private sector it does not make much sense in supporting in situ conservation as they have access to or own elite germplasm. In any case they can always rely on CGIAR centers or germplasm collections of the governments, universities etc. When the economic interests are high the industrialized nations do not hesitate to evolve appropriate IPR regimes. For example as Drahos points out the IP regime for chips and semi conductors was developed within a short time as the

industrialized nations realized the need for the same. In contrast Farmers' Rights is not in their agenda as they have the least interest in it except when they perceive that as a threat to Plant Breeders Rights or as a measure to circumvent the provisions of TRIPS.

It is argued that Farmers' Rights can be defended on the basis of equity and as a moral –political obligation the states owe to Farmers and as a means to balance the interests of farmers vis-à-vis the rights of IP holders like plant breeders. Thus Farmers' Rights is a countervailing idea that has roots in equity and helps to overcome the imbalance created by IP regimes.⁵⁴

While this view sounds reasonable, the justification for Farmers' Rights could be better stated if it were discussed more in terms of collective rights and dynamic nature of innovation than seen merely as a balancing measure. Farmers' Rights could be realized for different purposes but whether they could eliminate the discrepancy is a different question.

As it has been argued elsewhere (in chapter on indigenous knowledge), current notions of patentability or invention or prior art are skewed in favor of certain class of inventors and certain types of inventions. If at all anything the history of intellectual property protection for plants and plant varieties is also history of conflicts over the appropriability question.⁵⁵ Farmers' Rights need not always be viewed as a counter measure and hence justified. Rather it should be viewed as a right which can be justified on its own.

Farmers and communities are not relics of the past. Rather they are dynamic, learning and willing to innovate and experiment. Conserving PGFRA is one part of the story. The other part is making the most of PGFRA without loss of PGFRA for future generations. Thus they act as guardians as well as innovators. Their function as guardians of an irreversible resource deserves support from the global community and any obligation to them can be a justification for Farmers' Rights. Their role thus benefits the present generation and generations to come. Further by leaving a natural resource intact for future generations

although we know little about the value of the resource or its utility they are contributing to the betterment of the generations to come. In the past the PGFRA from land races and wild has been enormously helpful in producing varieties that withstand diseases or less susceptible to pests. By maintaining PGFRA and ensuring that this resource is available in the future in the event of a need they are acting as insurers.

An ever growing literature has demonstrated that farmers and communities are constantly engaged in conservation and innovation.⁵⁶ The innovations of the past have resulted in the diversity and the innovations of the present enhance the diversity. This diversity is thus dynamic and the activities that enable such innovations deserve to be supported. And communities should also have the rights over such innovations. Hence it is argued that Farmers' Rights should be implemented at the national level through appropriate laws and in situ conservation should be given the importance it deserves. The distinction between Farmers Rights as a political concept and legal concept is important but Farmers' Rights should be viewed as a legitimate political as well as a legal concept if the objectives of conserving in-situ genetic resources, rewarding the innovators and the rights of farmers over seeds are to be achieved.⁵⁷ As argued elsewhere in this dissertation upholding farmers' rights is important for it could form the basis for rethinking the intellectual property rights on seeds and plant varieties and for enhancing conservation.

Many countries have either enacted laws on this or are in the process of enacting laws.⁵⁸ It is too early to predict how these laws will ensure that Farmers' Rights are protected while providing for Plant Breeders Rights. But as Farmers' Rights is also an issue of policy, technology and balancing interests of different stakeholders, laws are necessary but not sufficient to realize them.

Conclusion

Although Farmers' Rights was put forth as an idea that would benefit the farmers and recognize their contributions and reward them it turned out to be only that. With the abdication of responsibility by the international community to ensure that it is implemented globally, it has become an issue that will be decided by nation states. As developing countries try to evolve a suitable IP system for seeds and plant varieties Farmers' Rights has emerged as a contentious issue. However the prospects of a Global Fund or international support for Farmers' Rights in the form of levies etc are dim. Hence Farmers' Rights linked with conservation of germplasm has become the responsibility of nation states. Thus the potential of Farmers' Rights as a countervailing force to Plant Breeders' Rights has been diminished greatly although it is still a subversive concept that cannot be negated so easily.

Notes and References

¹ Cleveland, David A. Murray, Stephen C. (1997)

² . FAO Conference, 25th Session. (1989)

³ This is the view taken by the organization representing seed industry.

“The undeniable contribution of farmers to the improvement of genetic resources over thousands of years has been based on selection at harvest (mass selection) and not on any particular variety creation work. Progress under these conditions is extremely slow and is insufficient to meet the requirements of the increasing world population in a sustainable environment”

Are "Farmers' Rights" and "Plant Breeder's Rights" Compatible?

<http://www.worldseed.org/FAQfrpbr.htm> Last visited 23rd March 2004

⁴ Cleveland, David A. Murray, Stephen C. (1997). Stephen Brush, among others, has pointed out the importance of the conservation by peasants through selection and cultivation of landraces.

⁵ According to Fowler

“...Third World farmers' have been found to employ taxonomic systems, encourage introgression, use selection, make efforts to see that varieties are adapted, multiply seeds, field test, record data, and

even name their varieties. In short, they do what many northern plant breeders do, except that they do not apply for patents – the one step in the process that requires skills, (and money) which they do not have” Fowler, Cary (1994)

⁶ Alcazar, Esquinas. J (1998)

⁷ Resolution 4/89, recognition of PBR and Resolution of 5/89, recognition of Farmers’ Rights were adopted by a consensus in the 1989 conference and were annexed to the legally non-binding International Undertaking. According to Resolution 5/89

“Endorses the concept of Farmers’ Rights (Farmers’ Rights means rights arising from the past, present and future contributions of farmers in conserving, improving, and making available plant genetic resources, particularly those in the centers of origins/diversity. These rights are vested in the International Community, as trustee for present and future generation of farmers, for the purpose of ensuring full benefits to farmers, and supporting the continuation of their contributions, as well as the attainment of the overall purposes of the International Undertaking) in order 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 that of the national biosphere. Allow farmers, their communities, and countries in all regions, to participate fully in the benefits derived, at present and in future, from the improved use of plant genetic resources, through plant breeding and other scientific methods”

⁸ “But despite the "rights" rhetoric in the label given to this idea, its implementation eschewed an explicit property-rights approach. Instead, the farmers' rights concept called for contributions from countries with crop breeding industries to establish an international fund which would dispense aid to developing-state farmers and farming communities to help them protect and conserve plant genetic resources and ensure that they "participate fully in the benefits derived" through the use of those resources” Carlson, Jonathan C. (1996).

⁹ Sedjo, Roger A. in Kloppenburg. J (1997)

¹⁰ FAO (1999)

¹¹ For instance Wood writes

“Once germplasm is removed from the farm and the country of origin, rights of ownership and means of control over the germplasm may become inoperative.... Even when the origin of samples can be identified, establishing a mechanism for any form of payment or transfer of benefit to farmers is fraught with difficulty” Wood, David in Kloppenburg J. (Ed) (1987)

¹² “... my own calculations show that 69% of developing countries derive more than half of their crop production from crops introduced from other continents. The developing countries of Asia have a

higher annual production of crops of Latin American origin (cassava, maize, rubber, etc) - \$ 27 billion—than do the countries of Latin America whose annual production of crops of indigenous origin is only \$14 billion Should the relatively poorer farmers of Asia pay the somewhat better-off farmers of Latin America for the use of this germplasm” Wood op cit

¹³ Kate, Kerry ten & Diaz, Carolina Lasén (1997) at P. 288

¹⁴ See the following for analysis on the idea of Farmers’ Rights and its origin

Girsberger (1999), Swaminathan. M. S (Ed) (1995), Correa. C (2000), Helfer, Laurence R (2002)

¹⁵ Brush, Stephen. B (1994)

¹⁶ For example According to Commission on Plant Genetic Resources

“The concept of Farmers’ Rights forms the basis of a formal recognition and reward system, intended to encourage and enhance the continued role of farmers and rural communities in the conservation and use of plant genetic resources. This interpretation aims at reconciling the views of the “technology-rich” and “gene-rich” countries, in order to ensure the availability of plant genetic resources within an equitable system”

¹⁷ The idea of trusteeship had been interpreted in many ways. See Kate, Kerry ten & Diaz, Carolina Lasén (1997)

¹⁸ Swaminathan M.S. (Ed) (1995)

¹⁹ Lane, Jane in M.S. Swaminathan (Ed) (1995)

²⁰ For instance Lesser writes

“If you look at it, it is more a general moral obligation and really not tremendously specific on how it is actually to be operated. Secondly, at least according to some who looked at farmers’ rights , it is not clear what the rights of communities would be under such an international system and hence may not satisfy the expectations of all potential users or providers of these materials. It was never implemented financially, and hence the rather extreme positions that have been taken up on this issue. Perhaps we can look at it more as a concept than as an operable system for our purposes

Lesser, William in Swaminathan M.S. (Ed) (1995)

²¹ For instance according to According to ETC Group (formerly RAFI) Farmers’ Rights

“Encompass all aspects of plant genetic resources including Germplasm, Information, Funds, Technologies and Systems (GIFTS) that are necessary to make any raw material a usable resource. GIFTS are ensured through a consistent international funding mechanism. Funds are used not to compensate individual farmers or indigenous people but to reward meritorious work that encourages conservation and use primarily in developing countries” (www.etcgroup.org) Last visited 23rd March 2004

²² According to Crucible Group Farmers' Rights should be viewed as the conditions necessary for transforming plant genetic materials into plant genetic resources. Thus "[for the best use to be made use of [plant genetic resources], farmers must first control their own biomaterials and have access to as wide a gene pool as possible. Second, farmers are entitled to retain and control their own knowledge about genetic resources and to access knowledge and information about their material when it is available elsewhere. Third farmers need funds and financial support to develop their resources. A fourth necessary component is the capacity building for farmers to develop further their own technologies and make appropriate use of, and adapt, other technologies. Fifth, farmers must have the freedom to control and develop their own farming systems. This includes their right to land and access to markets – in essence, the freedom to determine their own way of life" Group, Crucible (1999)

²³ Starr and Hardy cited in Girsberger, Martin A. (1999)

²⁴ The Report of the Commission on Intellectual Property Rights (www.cipr.org.uk) Last visited 23rd March 2004

²⁵ Girsberger (1999)

²⁶ Please refer to the discussion in chapter on seeds

²⁷ For example Blakeney writes

"Farmers' rights do not fit comfortably into an intellectual property context. Intellectual Property rights are generally speaking concerned with the stimulation of innovation by providing the incentive of prospective monopoly rights, for a limited period, as a reward for innovation. Farmers' rights, on the other hand, are a retrospective reward, of unlimited duration, for the conservation of plant genetic resources.

The beneficiaries of intellectual property rights are identifiable inventors or innovators, whereas farmers' rights ensure to communities of traditional farmers or those entities which represent them. In case of farmers' rights, it is often difficult to identify the beneficiary community, where, for a landrace is found in a number of different in situ national locations, as well as in ex situ collections outside the country. The subject-matter of each of the conventional categories of intellectual property right protection is precisely defined; whereas farmers' rights are attached to less specific incremental contributions to the innovation process.

It is also pointed out that, since the concept of farmers' rights was originated as a counterbalance to the intellectual property system, it would be illogical to incorporate those rights within the intellectual property system" Blakeney, Michael (2002a) at 9,10

²⁸ Mgbeoji (2001) & Stenson, Anthony J., Gray, Tim S (1999).

²⁹ For examples see the texts of laws enacted or being enacted in various countries – available at

³⁰ Lesser in Swaminathan (Ed) (1995)

³¹ Leskien, Dan, Flitner, Michael (1997)

³² ‘ There are at least five possible legal contexts within which farmers’ rights might be enacted : (1) biodiversity law; (2) intellectual property law ; (3) traditional knowledge law ; (4) human rights law ; or (5) sui generis legislation ‘ Blakeney, Michael (2002a) P 8

³³ Wood, David in Kloppenburg. J (ed) (1987)

³⁴ Gurdial, Singh Nijar (1998)

³⁵ “A possibility would be to encourage farmers to maintain and develop varieties through property rights. Farmers’ Rights allowing farmers to own the varieties they develop makes Farmers’ Rights equivalent to Plant Breeders’ Rights (PBR). Farmers developing a new, distinct, variety would own it, just as plant breeders own varieties they have developed. Access to the variety would be under farmers’ control. A simple system of registration could be introduced nationally and internationally by the deposition of new varieties. Perhaps the model should be a "copyright" system, similar to the Bern Convention for the Protection of Literary and Artistic Works. Registering a book with the national library makes unauthorized copy or "bootleg" publication a breach of the author’s copyright. Similarly, depositing a new variety in a gene bank could establish ownership rights for farmers”
Wood op.cit

³⁶ Cullet, Phillippe (2003)

³⁷ Refer to the discussion in the chapter on bioprospecting and the chapter on indigenous knowledge.

³⁸ Refer to the discussion in the chapter on seeds and chapter on CBD and TRIPS.

³⁹ Girsenger (1999)

⁴⁰ Correa. C (2000)

⁴¹ According to Darshan Shankar “Royalties will be minor in comparison to what will go to the people who are engaged in the production and sale of seeds Shankar ,Darshan in Swaminthan M.S (Ed) (1995)

⁴² “However, farmers’ rights are legal rights held by farmers which now need formal recognition in the context of IPR monopolies. The real issue of farmers' rights, and access and benefit sharing in agricultural biodiversity is to ensure that public good is not sacrificed for the private interest of the seed industry and that the seed industry profits do not grow by robbing the farmers of their livelihoods. The fundamental conflict between IPRs and farmers' rights is a conflict between private interest and public good, between private property and the commons. Farmers’ rights are, in fact, rights of farming communities and should, therefore, be implemented as a sub-category of

biodiversity related common intellectual rights for the domain of agricultural biodiversity. She points out a levy of 1% on the global seed trade would result in a fund of \$75 million. Shiva, Vandana (2001)

⁴³ For instance the Keystone International Dialogue, in which governments, industry, international organizations, and non-governmental organizations took part agreed to an idea of an international fund to implement Farmers' Rights. It agreed to a mandatory fund of a minimum of U.S. \$ 500 million per annum, or U.S. \$ 1.5 billion from 1993-2000. Report of the International Dialogue, 3rd Sess. (1991). A three percent levy on seed sales was suggested to create such a fund. M.S. Swaminathan (ed.,) (1995)

⁴⁴ Srinivasan C.S. (2003)

⁴⁵ "High-income gene-poor countries in the North would indeed make payments under a royalty model system to low-income gene-rich countries in the South, but the magnitude of these payments is quite modest. Much greater payments would flow between gene-poor regions of the South to a few gene-rich countries. The main gainers from the system for beans would be Mexico, Peru and Ecuador, while Brazil and sub-Saharan Africa would bear the brunt of the payments. Most countries in the south would have far more to gain from increases in productivity due to utilizing germplasm, than they would from receiving royalty payments for the ownership of germplasm" Pachico, Douglas (2001).

⁴⁶ Refer to the discussion in the chapter on Seeds

⁴⁷ Ramanna (2003)

⁴⁸ See the discussion in the chapter on seeds

⁴⁹ See the views in

Ramanna, Anitha (2003), N.S.Gopalakrishnan-2002, Phillippe Cullet (2003), Sampath, Poornima (2000) Seshia, S. 2002

⁵⁰ Since a detailed critique is being prepared, not as part of this dissertation, further analysis is not given here.

⁵¹ This idea is similar to disclosure of origin idea expounded in detail in the chapter on indigenous knowledge and this should be applicable in all countries.

⁵² "However driving the supply of public goods by willingness to pay tilts conservation efforts towards the preferences of the wealthy. And worse the fact that all contributions are purely voluntary means that global conservation efforts are fated to be under-funded" Stone (1996)

⁵³ A detailed discussion on the lines is beyond the scope of this chapter.

⁵⁴ For instance "... in the context of Farmers' Rights, equity as used in international law and intergenerational equity only present a moral-political basis for the realization of those rights. Depending on the nature and purpose of Farmers' Rights realized, Farmers' Rights eliminate the existing discrepancy between the legal treatment of modern inventions on one hand and traditional PGFRA and the related know how on the other hand. The realization of Farmers' Rights thus allows states not only to fulfill their moral-political obligations arising from equity as used in international law and intergenerational equity, but also to balance existing patent and plant breeders' rights laws" Girserger (1999).

⁵⁵ This has been discussed elsewhere in the dissertation – See chapter on seeds.

⁵⁶ Bellon, R.M, Risopolous, J (2001), Nazarea, Virginia. D (1998), Douthwaite, Boru (2002)

⁵⁷ See Biber-Klemm S (2002), See Correa. C (2000) also.

⁵⁸ Alker, D., F. Heidhues (2002).