The importance of farmers cannot be undermined in any country in general, and in developing countries in special, as they need special protection due to their dependence on farming for their survival. In developing countries like India, farming is not yet an industrial activity, neither the farm produces just commodities. Farmers may be there with or without ownership over the land. This diversity demands classification of farmers into several categories. While some among these categories did not, or do not face much problems relating to their livelihood, some others have always suffered oppression, and torture throughout the history in India, by whatever name they may be called. They had thus always several problems connected with their profession. But, they had lots of freedoms such as the control over the seeds as to how to use them, to exchange them with other farmers, to save and re-use them. In all the phases of the Indian history where farmers had to face torture in the hands of the ruling class also, the tax collectors’ eyes were on the farm produce and not on the seeds. This was because the seeds were not of any economic value.

With the advent of the new intellectual property right (IPR) called the plant breeders rights (PBR); there emerged new problems for the farmers, and thus the need for new solutions. In fact, with the emergence of this new IPR, the farmers were compelled to defend themselves in order to continue their freedoms as before. So, there
were attempts in the international level which had its impact in the national levels as well.

In this Chapter, the potential areas of threat to farmers’ sovereignty (in their profession), due to the advent of PBR are examined. These are called the areas which require strong State intervention through legislation. Thus, these are the areas of farmers’ rights (FR) as per this thesis. As the entire thesis is revolving on farmers’ rights in the context of PBR, a definition is necessary to locate the people on whom the rights should be bestowed, in the context of PBR. So, a definition is also given to farmers in this Chapter. However, it is an interesting aspect that the FR as understood in the international level and in the Indian level is different. This is because, due to the difficulties in identifying the farmers who conserved and preserved the PGR in the international level, farmers are not just persons, or even community of persons, but even the State itself. Thus, it is a highly collective right. In the Indian level however there are a lot of differences in applying the FR. So, separate discussion is given regarding the development of FR in the international level as well as in the Indian level.

It is to be noted here that it is the creation of PBR which compelled the making of FR. So, first a brief discussion about the various types of plant breeding, the merits and demerits of plant breeding and an analysis of the development of PBR is needed, and then a perusal into the eventual follow up of FR in the international level and then in the Indian level.

Plant breeding is the art and science of changing the genetics of plants in order to produce desired genetic characteristics.
Plant breeding can be accomplished through many different techniques ranging from simply selecting plants with desirable characteristics for propagation, to more complex molecular techniques. The modern plant breeding techniques are, the marker assisted selection\textsuperscript{1}, and through genetic modification, by creating transgenic plants\textsuperscript{2}. In the marker assisted selection, the breeder identifies the particular gene of interest to him from among many genes that control the trait of a plant. This is done by using tools such as molecular marker, or DNA (Deoxy Ribonucleic Acid) fingerprinting. Genetic modification indicates the adding of specific gene or genes to a plant to produce a desirable phenotype.

This clearly shows that, for a modern plant breeding to take place, the PGR of a traditional variety, or a wild variety is needed as a basis. It is also a fact that, along with the PGR, if TK is also available, the job of the plant breeder becomes much easier. Because then he need not find out that particular character of the plant, which is contained in the TK. This shows the enormous amount of work the breeder could skip thanks to the farmers’ preservation of the PGR as well as TK. So, this requires the law to reward the farmers for that.

As this thesis is centered on the problems caused during the intersection of PBR, and FR, it is necessary to have a brief discussion about the modern plant breeding, and the historical development of the PBR. In the discussion about the modern plant breeding, the merits as well as the demerits of the same are also essential so as to give a balancing picture about it.

\begin{footnotesize}
\begin{enumerate}
\item For details, see http://en.wikipedia.org/wiki/Plant_breeding. Visited on 20-03-2010.
\item Ibid.
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1.1 Modern Plant Breeding-Merits and Demerits

Actually plant breeding helps the agricultural production very much, by adding positive characters like high yield, resistance to draught, saline water, pest, and herbs, and many other qualities, and nourishments which the naturally occurring produces do not have. There are many who attack the arguments against transgenic crops as anti-environmental, and many who consider them as the very ender of the world. It is interesting to note the equally strong arguments for and against newly bred varieties of plants, especially agricultural plants. Those who argue in favour of them say: “All of our more than 200 varieties of dogs were bred from wolves, yet who would argue that greyhounds or French poodles should be banned as unnatural abominations? It happens in food, too, where few of our staples would flourish in nature.”

They also argue, “There will be nine billion of us by 2050 and food demand will have increased by 56% to 120% compared with 2000. At the same time, food producers will be contending with increasing climate instability as well as loss of arable land by salinisation and erosion. Only about 18% of the planet’s surface is arable land and, unless we can bring more into production, that percentage will be further reduced by the demands of housing and transport. Feeding the world means a constant race for improved methods, and standing still isn’t an option. That’s why the scare

3. Gordon Cornway, Professor of International Development, Imperial College London, said that the farmers must use the best aspects of organic methods and GM technology to maximize yields while limiting damage to ecosystems. More details are available at http://www.timesonline.co.uk/tol/news/science/earth-environment/article6985295.ece. Visited on 20-03-2010.
stories and pseudo science pedalled by the anti GM-lobby must be taken head on⁴.”

But there are even scientists who are there to oppose. In an “Open letter from World Scientists to All governments concerning Genetically Modified Organisms (GMOs), signed by 828 scientists from 84 different countries (most number of scientists from UK (115), USA (78), Canada (64), India (56), Australia (44), and France (36)) “called for the immediate suspension of all environmental releases of GM crops and products, both commercially and in open field trials, for at least 5 years; for patents on living processes, organisms, seeds, cell lines and genes to be revoked and banned; and for a comprehensive public enquiry into the future of agriculture and food security for all⁵.” Their main reason is that

“Genetic engineering introduces new genes and new combinations of genetic material constructed in the laboratory into crops, livestock and microorganisms. The artificial constructs are derived from the genetic material of pathogenic viruses and other genetic parasites, as well as bacteria and other organisms, and include genes coding for antibiotic resistance. The constructs are designed to break down species barriers and to overcome mechanisms that prevent foreign genetic material from inserting into genomes. Most of them have never existed in nature in the course of billions of years of evolution. These constructs are introduced into cells by invasive methods that lead to random insertion of the foreign genes into the genomes (the totality of all the genetic material of a cell or organism).

⁴ Available at http://www.timesonline.co.uk/tol/news/world/ireland/article6926771.ece. Visited on 02-02-2010.
This gives rise to unpredictable, random effects, including gross abnormalities in animals and unexpected toxins and allergens in food crops.”

Among various other reasons pointed out as the dark and highly dangerous sides of the GMO’s, some reasons point towards everlasting health hazards to the living kingdom as such. The Scientists caution that “the potential hazards of horizontal transfer of GM genes include the spread of antibiotic resistance genes to pathogens, the generation of new viruses and bacteria that cause disease and mutations due to the random insertion of foreign DNA, some of which may lead to cancer in mammalian cells. The ability of the CaMV (cauliflower mosaic virus) promoter to function in all species including human beings is particularly relevant to the potential hazards of horizontal gene transfer.”

The above said arguments are brought to the notice of the reader just to analyse the pros and cons of the new plant breeding. As most of the new plant varieties are bred using gene technology, most of them are transgenic crops. There are negatives as well as positives as pointed out. But, it is for the law to decide whether to put a blanket ban on all the newly bred varieties using gene technology, or any other technology, or to allow them to be used, with strict observance of law. Law can decide which all regulations should be put on the seeds, or the products of GMOs, or other newly bred varieties. That is not the concern of this discussion because, as the PBR are already a reality, there is no question of denying them their rights on the negatives of the newly bred varieties. The negative sides of it are left to the legal control.
The reason why the merits and demerits of new plant breeding are examined is to highlight two aspects. One is the possibility of using the new varieties, for improving and increasing food production. The other is, the amount of intelligence, effort, money, and energy spent in improving a new variety. These two factors cannot be overlooked while discussing the PBR. These are the justification for their existence, and the reason for their development. Their importance cannot thus be ignored not only due to these two points, but also due to another reason which is stronger than these two. And this reason is the economic and political reason which played very strongly to make the PBR almost equivalent to a patent right. The political play was forced due to the economy involved in having the PBR as an exclusive right. This takes us to the development of the PBR, in the international as well as national level, with highly diplomatic dramas underpinning.

The history of the PBR is necessary due to the fact that it is in the context of this right, and the possible problems this right is going to pause to the farmers that this study is analyzing. So, it is necessary to know the possible political and economic connotations, and thus the political as well as economic reasons, more than legal reasons which built this right. To fight such a right, the FR must also have strength of the same stature. The discussion about the history of the PBR will also help us to know the background of the model international law for the protection of plant varieties (which gives rights to the plant breeders) called the UPOV which is under study in the next Chapter.

As was pointed out earlier, something which never faces any threat does not need recognition in the form of rights. When the
seeds and the TK were not of any economic value, and there was no threat of someone snatching them from the people who developed them, there never arose a question of any right over them. But, in the context of PBR, the basic material which is so essential for the development of new plant varieties, and the TK associated with them if any, are now of high demand. Developing countries had the experiences of biopiracy\(^6\) in many ways. All these strongly tend to suggest that there is a need to positively assert the rights of the farmers over the PGR and TK which they developed. As the result of using this PGR or TK ends up in a property right with high economic return, question also arises as to whether any share of such profit is due to the holders of the PGR and the TK. So, some kind of a right of the farmers over the PGR and the TK is now to be recognized by law. This is surely not a right hitherto known to the farmers. Thus, surely these rights are *new generation rights*.

Another area where the farmers require rights is their relation to the seeds or the PGR of the protected (by PBR) variety. Here the question is, if the PBR put restrictions on the farmers to use, save, re-use and exchange the seeds of the protected variety, are farmers having a better rights over this property right, so that they should be given this right? Because, the farmers always had the freedom to use, save, exchange, and re-use their seeds. This can be called as a customary right. So, in the light of PBR, if they put restriction on the farmers in their exercising their customary right, the intervention of the law is necessary. Apart from this, another reason

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also suggests for the intervention of law in this matter. Farmers are the food producers of any nation. The method of farming differs from country to country. In India, we still have the traditional farming system with the traditional farmers, as different from the capitalistic farming system. While the present system of farming in India is substantially traditional, unless the present farmers are allowed to continue their farming with the advanced technology, the result will be their disappearance. In the era of plant breeders, the landlords are not a threat to the extinction of our farmers. If food production is to be continued as such, and India has to retain her domestic food production, all those who are engaged in the food producing activities today are to continue to do it. Otherwise, the food production will be controlled by the corporate.

1.2 The Historical Journey to the Plant Breeders’ Right

In the international level, to trace the history of the breeders’ rights which has the effect of putting the farmers (the wider canvass being the indigenous or local people’s) rights into peril has two very crucial level. One is the development of legal or judicial response towards patenting of life forms especially the plant life, and the second one is the development of liberalization in trade related matters. While the first one resulted in allowing intellectual property (patent or patent like) rights in all human made inventions (sometimes even discoveries) overthrowing the oppositions against morality, the second one allowed the patent holders, or the like right holders to easily have access to the markets of the developing countries as the State protections in the form of restrictions were taken away. An analysis of the international documents are made in this Chapter to
find out how these developments in various parts of the globe, especially the United States resulted in unifying the law in this regard in the International level.

1.2.1 Patenting of life- History- Resulting in TRIPS and the UPOV 1991

Patenting of life forms was always objected on the ground of morality, public order and law of nature, as the patent law results in converting natural products into private property. It is also opposed on the ground that in biotechnology, there is no invention, but there are only discoveries. For example, if a scientist found out that a particular gene is responsible for causing diabetics in human beings, and by removing that gene, the disease can be cured, is it a discovery or an invention? He has only ‘discovered’ that peculiarity of the gene, which already existed in nature. But, contrary to discovering a substance that laid hidden somewhere, in this case, there was an enormous amount of intellectual input, which makes this ‘discovery’ different. So, the question is, should the amount of intellectual labor that is put for the discovery or invention that matter, or should the amount of modification, and remoteness from the naturally found form that matter? Those who argue against intellectual property being given for biotechnological ‘inventions’ however feel that the amount of modification, and the remoteness from the naturally found living form is the basis for the distinction between invention and discovery. So, they were totally against allowing patent or like intellectual property rights on discoveries.
However, against all these arguments grew the patent and the PBR as those who argued for it were mighty and wealthy people as against the poor illiterate (in the formal education sense) traditional people like the traditional farmers. This happened first in the U.S. soil, spread to Europe to some extent and, finally to the international level, thereby binding all the nations in one way or the other. Let us thus have a very brief history about what happened in U.S. regarding patenting of life forms in general and plant life in particular. This is important because, the traces of the laws in U.S. sometime back is still found in the international laws, and as an influence (though not India is a party to it) in the Indian law also.

1.3 A brief history of Plant Breeders’ Rights and patenting of life forms in U.S.

1.3.1 Plant Breeders’ Rights -1930-1970 (From Plant Patent Act to Plant Variety Protection Act)

Before 1930, there was no law for patenting of plant life in U.S., though there was the history of patenting of life substances elsewhere in the early nineteenth century when Louis Pasteur patented a culture of yeast cells in 1873. Adrenaline and insulin were also patented in early 20th century7. It is interesting to note how the development of law in this regard most often crisscrossed with the International development, and how they influenced each other.

In 1930, the U.S. started with the Plant Patent Act (PPA) which gave patent protection to distinct and new plant varieties, against its asexual reproduction. This was a very limited protection

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because only the asexual reproduction by third parties was prevented. So, reproduction as such was not prevented. Anybody could have reproduced the patented plant through sexual reproduction (through seed) and thus deprived the patent holder the ‘exclusiveness’ of his right, which left the breeders very much dissatisfied. However, this dissatisfaction led to strong protest and pro arguments by the breeders saying that new varieties of plants through breeding are required for more productivity. However due to the aftermath of world war II, and due to industrialization, the need to promote inventions was felt very badly and in the International level there was a move to protect the plant breeders’ rights by way of an International Convention for the Protection of Plant Varieties which is called UPOV (which is the abbreviation of the French word Union pour la Protection des Obtentions Vegetales) in 1961. (discussed later).

Almost the same pulse was felt in U.S. which enacted the Plant Variety Protection Act (PVPA) in 1970. This legislation gave patent like protection to sexually reproduced materials contrary to the 1930 Act which gave patent like protection to novel varieties of sexually reproduced plants. The Act provides for a certificate of plant variety protection to those persons who breed distinct, uniform and stable plant varieties. (the same words are used in the UPOV 1991). This certificate confers upon the owner the right to ‘exclude others from selling, offering for sale, reproducing (through any means, sexual or asexual) importing, exporting the variety, or using it in producing a hybrid or different variety there from’. However, there were two very important exceptions in effect took away the ‘exclusiveness’ of this right to a very great extent. These exceptions

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8 PVPA, Paragraph 2483.
were the research exemption and farmers’ privilege. While the research exemption allowed the protected variety to be used for *bona fide* research purposes, farmers’ privilege allowed farmers ‘whose primary occupation is the growing of crops for sale for other than reproductive purposes, to sell such saved seed to other persons so engaged, for reproductive purposes’\(^9\). Some authors note that the broad exemption under farmers’ privilege “provides for a wide distribution of certified seed without plant breeders receiving compensation for their ‘protected’ products. In just one crop cycle developers of new plant varieties have essentially lost all exclusive rights to market and sell their innovation\(^10\).”

This dissatisfaction prompted the plant breeders to fight for the traditional patent right to be given for the plant varieties. This was made possible through judicial decisions, and not through legislations. Its end however resulted in a very drastic change in the very jurisprudence of patenting of life forms in 1980 in the case of *Diamond v Chakrabarty*.

### 1.3.2 Patent rights on life forms including plants -From 1852-1980 (From *Le Roy v Tatham* to *Diamond v Chakrabarty* and *Ex parte Hibberd*)

This phase was marked by response of judiciary towards the arguments that even the natural substances are patentable if there is an intervention by human beings. Initially the American courts did not allow the patenting of natural products and the forces of nature. The U.S. Supreme Court decision, in *Le Roy v Tatham* (1852)

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\(^9\) *Id.*, Paragraph 2543.

confirmed that no power of nature is patentable. In 1939, the principle that a discovery was not patentable came under challenge in Dennis v Pitner\textsuperscript{11} in which the claim was for the discovery of an effective insecticide in an extract from the root of a plant found in South America. The Supreme Court however, held that the subject matter was patentable as it felt that “an old substance with newly discovered qualities though possessed those qualities before the discovery, it is a refinement of distinction\textsuperscript{12}”. But in 1948, in the US case in Funk Bros Seed Co. v Kalo Inoculant Co\textsuperscript{13} the Court expressed the view that nature was not to be patented. The Court held “that natural products, like the heat of the sun, electricity, or the qualities of metals, are part or the storehouse of knowledge of all men.”

However, in 1980, the famous Diamond v Chakrabarty\textsuperscript{14}, the court was of the view that patent can be granted to Ananada Chakrabarty of a modified micro-organism that could be used in oil spills on account of its capacity to break down the hydrocarbons in crude oil. The patent office rejected the claim saying that micro-organisms are “products of nature”, and that living things are not patentable subject matter under section 101 of the federal statute. It is to be noted that no naturally occurring bacteria had the property of reducing hydrocarbons to a simpler molecular structure to degrade the crude oil. So the court held that the “respondent’s micro-organism plainly qualified as patentable subject matter, and his claim was not to a hitherto unknown natural phenomenon, but to a non-naturally

\textsuperscript{11} 106 F. 2d 142.
\textsuperscript{12} However, Justice Sparks disapproved the patentability of the cube roots utilized as an insecticide. This is because the judge felt that this mere discovery does not fulfill the conditions required for patent protection such as useful art, machine, manufacture, and composition of matter or any new or useful improvements.
\textsuperscript{13} 333 US 127.
\textsuperscript{14} Sidney A. Diamond v Ananda M. Chakrabarty 447 U.S. 303.
occuring manufacture or composition of matter-a product of human ingenuity having a distinctive name, character and use”. In effect, the court was of the view that the Congress intended statutory subject matter to ‘include anything under the sun that is made by man.’

This highly pro-patent decision was of immense impact not only in other matters of patent, but also of plant varieties. In *Ex parte Hibberd* the Court held that even the plant varieties are patentable under the Patent Act, though the examiner rejected the claims on the ground that the subject matter is covered by the Plant Patent Act, 1930 and the Plant Variety Protection Act, 1970. The facts are as follows.

The case was an appeal from the examiner’s decision of rejecting the claims on maize plant technologies including seeds (claims 239 through 243), plants (claims 249 through 255), and tissue culture (claims 260 through 265), which have increased tryptophan level or which are capable of producing plants of seeds having increased tryptophan content. The examiner rejected the claim because he contended that 35 USC 101 ("Whoever invents or

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16 Claim 239: A maize seed having an endogenous free tryptophan content of at least about one-tenth milligram per gram dry seed weight and capable of germinating into a plant capable of producing seed having an endogenous free tryptophan content of at least about one-tenth milligram per gram dry seed weight.
17 Claim 249: A maize plant capable of producing seed having an endogenous free tryptophan content of at least about one-tenth milligram per gram dry seed weight, wherein the seed is capable of germinating into a plant capable of producing seed having an endogenous free tryptophan content of at least about one-tenth milligram per gram dry seed weight.
18 Claim 260: A maize tissue culture capable of generating a plant capable of producing seed having an endogenous free tryptophan content of at least about one-tenth milligram per gram dry seed weight, wherein the seed is capable of germinating into a plant capable of producing seed having endogenous free tryptophan content of at least about one-tenth milligram per gram dry seed weight.
19 For the details of the claims in the patent application, see [http://www.google.co.in/patents?hl=en&lr=&vid=USPAT4581847&id=oLc9AAAAEB AJ&oi=fnd&dq=Endogenous+free+Tryptophan&printsec=abstract#v=onepage&q=Endogenous%20free%20Tryptophan&f=false](http://www.google.co.in/patents?hl=en&lr=&vid=USPAT4581847&id=oLc9AAAAEBAJ&oi=fnd&dq=Endogenous+free+Tryptophan&printsec=abstract#v=onepage&q=Endogenous%20free%20Tryptophan&f=false).
discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefore, subject to the conditions and requirements of this title”) cannot be applied to give patent to a plant or plant variety, as the latter subject matter is covered by another legislation called the Plant Patent Act (PPA) and the Plant Variety Protection Act (PVPA). According to him, though the *Diamond v Chakrabarty* decision held that anything under the sun which is manmade is patentable, even a man made subject matter, which is exclusively covered by other legislations should be excluded from the purview of the Patent legislation, and thus the interpretation given to it in the *Diamond v Chakrabarty* decision. In a nutshell, the argument was that, *Diamond v Chakrabarty* dictum can be applied only to subject matters which are not covered by other legislations. However, the Board of Appeals rejected the examiners view and held that the language of the PVPA and PPA does not restrict the language of 35 SC 101. The Board held:

“The examiner does not point to any specific language in the plant-specific Acts to support his position that the plant-specific Acts restrict the scope of patentable subject matter under Section 101. We have examined the provisions of the PPA and the PVPA and we find, as did appellants, that neither the PPA nor the PVPA expressly excludes any plant subject matter from protection under section 101”

The Board, after examining the legislative history of the PPA and the PVPA came to the conclusion that there is nothing in the legislative history of these two Acts to show that their enactment was meant to narrow the scope of 35 SC 101. The Board held:
“The Supreme Court in *Diamond v. Chakrabarty*, addressed the legislative history and purpose of the plant specific Acts and noted that prior to 1930 there were two obstacles to obtaining patent protection on plants. The first was the belief that plants, even those artificially bred, were products of nature not subject to patent protection; the second was the fact that plants were thought not amenable to the "written description" requirement of the patent law. The Supreme Court noted that Congress addressed both of these obstacles in enacting the PPA. Congress explained at length its belief that the work of the plant breeder "in aid of nature" was patentable invention, and it relaxed the written description requirement in favor of a description "as complete as is reasonably possible." In our view, the Supreme Court's analysis of the legislative history of the plant-specific Acts makes it clear that the legislative intent of these acts was to extend patent protection to plant breeders who were stymied by the two noted obstacles” The Board also ruled out the examiners objection that the very presence of the two specific legislations implicitly repealed or narrowed section 101, as the Board was of the view that repeals by implications are not favoured, and that in the absence of conflict between two or three legislations, all should be given effect to. Thus the court was of the view that plant varieties are also patentable subject matter.

From then onwards, not only plant varieties, but also genes developed through genetic engineering, or even substances isolated from naturally occurring matter including genes whose prior existence
were unknown before the cell or any of its components were modified are also subject matter of patent\textsuperscript{20}.

Thus, it could be seen that after 1970, plant breeders had a better time, one through the PVPA which recognized wider rights to them, (though with very wide exception.), and the other through decisions like \textit{ex parte Hibberd}. However, this was only a history, and as things stand today, the PBR have taken a substantially different shape just as the Lord Vamana grew to a gigantic figure from that of a dwarf, dethroning the King Mahabali\textsuperscript{21}. This right is now capable of capturing huge profit to the holder. The economy of this right is such that, more and more multinational corporations come forward to invest in plant breeding, because they have a feeling that they will get huge benefit out of this investment. In order to ensure this huge return, they lobby very strongly in such a manner that many countries, including India are forced make legislation for the protection of PBR almost in tune with UPOV.

At this juncture, when a private right is created for the development of a new variety, one has to think of another set of people who conserved, and preserved and even developed in a natural way the PGR and TK for thousands of years and they are the farmers. Due to the emergence of PBR, the farmers were deprived of many of

\textsuperscript{20} Verma S.K. “TRIPS and Plant Variety Protection in Developing Countries”, 6 EIPR 281. 1995.

\textsuperscript{21} This is an epic that, once there was a King called Mahabali who ruled Kerala with much prosperity, honesty and richness. Alarmed by the growth of this Asura King, Lord Indra got scared and asked Lord Vishnu to help him to get rid of this King. Lord Vishnu took his fifth incarnation as a dwarf (Lord Vamana), and asked for three feet of land from the King. On Mahabali’s agreeing this, the Vamana assumed a gigantic figure with the result that he measured the whole earth with one foot, the space with another, and waited for a place to put the third. The King Mahabali then showed his head for putting the third foot, and Lord Vamana kicked him down to Pathala (under earth) giving him the boon to come to Kerala to visit his subjects once in an year, and this day is celebrated as Onam in Kerala.
the freedoms they were enjoying, and just as the plant breeders are given property rights over the variety they developed, no such recognition was there with the farmers regarding their efforts in preserving and conserving the same. It is this contrast that prompted the discussions in the international level which led to the development of FR.

### 1.4 Historical Development of Farmers’ Rights as a reaction to PBR in the international level

As was pointed out earlier, when a new right was created which impaired the freedoms and to a great extent the very livelihood of some people, the reaction of the later or on behalf of them will be to nullify the effect of the new right, or to balance it. In the international level, FR was developed in that manner. Concerns of the developing world and their advocates have been growing that strengthened IPRs in agriculture are harmful to small scale farmers and accelerate the erosion of agricultural biodiversity through the replacement of genetically diverse landraces by uniform modern varieties. Moreover, the perceived inequality in the distribution of benefits between farmers as suppliers of PGRFA and the producers of commercial varieties that ultimately rely on such germplasm have resulted in a counter concept to PBR. The first use of Farmers' Rights as a political concept dates back to the early 1980s, when Pat Roy Mooney and Cary Fowler of the then Rural Advancement Foundation International (now ETC-Group) coined the term to highlight the

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valuable but unrewarded contributions of farmers to plant genetic resources for food and agriculture.

The idea came up as a countermove to the increased demand for plant breeders' rights, as voiced in international negotiations, to draw attention to the unremunerated innovations of farmers that were seen as the foundation of all modern plant breeding. Pat Roy Mooney argued that any legal arrangement which may hinder farmers in their practice of saving, reusing, improving and developing seeds should be condemned. According to Cary Fowler, the concept of FR can be traced back to the work of the renowned plant explorer, geneticist and plant breeder Jack R. Harlan (1917-1988), who spoke of farmers as the 'amateurs' who had in fact created the genetic diversity that had become subject to controversies. In fact, today’s FR reflect both these aspects.

Moving on to the making of the FR formally, it first took place with the Food and Agriculture Organisation (FAO) of the U.N., in relation to the making of the International Undertaking on Plant Genetic Resources for Food and Agriculture (IUPGRFA). FR were reported as being addressed in an FAO forum for the first time was at the First Meeting of the Working Group in Rome, in 1986, which focused on legal and technical matters in addition to discussing the feasibility of establishing an international fund for plant genetic resources. In their analysis of country reservations to the IUPGRFA, the Working Group identified various categories of reservations, one of which involved PBR and considered ways and means to reach negotiated solutions to the problem so as to achieve widest possible

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adherence to the IUPGRFA. One solution found was to recognize the rights of plant breeders. It was in this context that FR were addressed for the first time. The working Group emphasized that, in addition to the recognition of PBR, specific mention should be made of the rights of the farmers of the countries where the materials used by the breeders originated. These materials were the result of the work of many generations and were a basic part of the national wealth. On the basis of the discussion in the Working Group on how to deal with country reservations to the IUPGRFA and attract greater adherence, a report was produced for the Second Session of the Commission on Plant Genetic Resources (CPGR), to be held in Rome in March 1987.

The Second Meeting of the Working Group of the Commission on Plant Genetic Resources took place in Rome in 1987, which prepared the ground for discussions in the upcoming Second Session of the Commission with regard to several agenda items. At this meeting, FR were addressed in greater detail, and thus this report is a milestone in the history of FR. The most important parts of the same are reproduced below:

“During the discussion of document CPGR/87/4, the Working Group agreed that the breeding of modern commercial plant varieties had been made possible first of all by the constant and joint efforts of the people/farmers (in the broad sense of the word) who had first domesticated wild plants and conserved and genetically improved the cultivated varieties over the millennia. Thanks were due in the second place to the scientists and professional people who, utilizing these varieties as their raw material, had applied modern techniques to achieve the giant strides made over the last 50 years in genetic improvements. In recent years some countries had incorporated the
rights of the latter group into laws as 'Breeders' Rights', i.e. the right of professional plant breeders or the commercial companies which employ them to participate in the financial benefits derived from the commercial exploitation of the new varieties. However, as document CPGR/87/4 pointed out, there was presently no explicit acknowledgement of the rights of the first group, in other words, no 'Farmers' Rights'. The Working Group considered such rights to be fair recognition for the spade-work done by thousands of previous generations of farmers. And which had provided the basis for the material available today and to which the new technologies were in large measure applied. The Group agreed, that what was the issue here was not individual farmers or communities of farmers but the rights of entire peoples who, though having bred, maintained and improved cultivated plants, had still not achieved the benefits of development nor had they the capacity to produce their own varieties. Alternative names such as 'right of the countries of origin' or 'gene donors', were proposed, but the conclusion was that the name 'Farmers' Rights' was the most expressive\textsuperscript{24}.

The working group however had entrusted the further development of the concept of FR with a small contact group, which were to negotiate mainly three themes called the breeders’ rights, farmers’ rights, and the free exchange of genetic material. The Working Group concurred that Breeders' Rights and FR were parallel and complementary rather than opposed, and that the simultaneous recognition and international legitimization of both these rights could help to boost and speed up the development of the people of the

\footnote{Available at \url{http://www.farmersrights.org/about/fr_history_part2.html}, visited on 20-02-2011.}
world. The idea of developing farmers' and plant breeders' rights simultaneously in order to seek a balance between the two also emerged at this meeting.

For the first time documented discussion on FR took place in the second session of the Commission on Plant Genetic Resources in 1987. The main discussions focused on the aspect that at par with PBR, FR should also be recognized. The important parts of the Report are reproduced below.

“On the question of farmer's rights, delegations expressed a wide range of opinion. Most delegations which intervened on the subject stressed the importance of the concept of Farmers' Rights, holding that these rights derived from centuries of work by farmers which had resulted in the development of the variety of plant types which constituted the major source of plant genetic diversity; many of these resources were now being exploited in other countries as well and had become, in fact, part of the common heritage of mankind. They considered that Farmers' Rights were up to a point comparable with breeders' rights, which even existed in the national legislation of many countries, and it was therefore fitting that Farmers' Rights should also be recognized.”

In the same session, in the summary Report of the contact group, deeper level of recognition of FR took place, which fell short of defining FR. The contact group found that recognizing the FR is a difficult task due to various reasons. This could be quoted as,

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“Breeders’ rights are already recognized by national legislation in many countries. The so-called 'Farmers' Rights', however, which stem from the work that farmers have performed over the centuries, which resulted in the formation of the land-races, have not found any recognition in the laws and institutions of nations. It was agreed that these rights, too, must be given some formal recognition. It was acknowledged that, while the so-called 'Farmers' Rights' could not yet be given a precise definition, some sort of compensation for their most valuable contribution to the enrichment of the plant genetic resources of the world was well-founded and legitimate. It was pointed out that one way of giving practical recognition to this right could be in a form of multifaceted international cooperation including a freer exchange of plant genetic resources, information and research findings, and training. Another way could be through monetary contribution for financing a programme for the furtherance of the objectives of the International Undertaking on Plant Genetic Resources.  

Thus, though the contact group also did not reach a precise definition of Farmers’ Rights, it paved way for further negotiations on this matter. The matter then reached the FAO council, and for the first time it was discussed in the Council. In this discussion, the Council expressed its satisfaction on the efforts of the Commission through its working Group in shaping the Farmers’ Rights. In the controversies on control over genetic resources in the 1980s, there were deep conflict lines between the parties. Eventually, William Brown, then

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26 Report of the Second Session of the Commission on Plant Genetic Resources, 16-20 March 1987, CL 91/14, Appendix G.
chair of the US National Board for Plant Genetic Resources, initiated a contact with the Keystone Center in Colorado, with the request of holding a dialogue on plant genetic resources among international stakeholders. The Keystone Approach was to invite stakeholders as individuals, to reduce conflict level and seek dialogue, to keep the discussions off the record, and to produce a report on the basis of consensus only. The Keystone Dialogues took place in 1988, 1990 and 1991, in Keystone, in Chennai and in Oslo respectively, and were chaired by the distinguished Prof. M.S. Swaminathan, who also led an Interim Steering Committee that gave direction to the dialogues.

One of the recommendations of the Keystone centre was that there should be an international fund for helping the farmers to conserve and preserve the genetic diversity, as a compensation which is as an obligation. A breakthrough of the FR took place in the twenty fifth session of the FAO in 1989, where it adopted a Resolution (5/89) on Farmers’ Rights (more discussion in the Chapter dealing with ITPGRFA). As per this non-binding resolution, Farmers’ Rights meant “the rights arising from the past, present and future contributions 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 trustee for present and future generations 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)”.

However, first of all there was no shape to this concept yet, as this definition did not make it clear as to what are the rights, who are to get these rights, and in what manner. Another thing was that
these Resolutions considered PGR as the “common heritage of mankind”, so that they should be freely available to all. The contradiction here was that, while the FAO Resolution 4/89 clarified that there is no incompatibility between UPOV and the IU (more discussions in chapter dealing with UPOV and ITPGRFA), it meant that, the PBR will be protected even while access is given. However, the PGR of the farmers will remain commonly available to all due to the “common heritage” concept.

However, it is to be noted that in the international law, the principle was the “permanent sovereignty of the nations over their natural resources”. This contradiction happened due to the following reasons. Common heritage of mankind (also common heritage of humanity, common heritage of humankind or common heritage principle) is a principle of international law which holds that defined territorial areas and elements of humanity's common heritage (cultural and natural) should be held in trust for future generations and be protected from exploitation by individual nation states or corporations.\(^\text{27}\) The common heritage concept first originated in the international law in the Outers Space Treaty of 1967, the main of which was that celestial bodies like the moon shall not belong to any particular nation by the claim of sovereignty, and these resources should be used for the welfare of mankind, and for peaceful purposes. This concept is also seen in the Moon Treaty and the United Nations Convention on the Law of the Sea (UNCLOS).

However, it is to be noted that these celestial bodies or the deep sea bed never formed part of the territory of the State. But,

regarding the PGR, they belong to the territory of the State, and the extension of the common heritage principle to it was unacceptable. The principle acceptable here is the permanent sovereignty one. Fortunately this happened in the 1991 FAO Resolution. This time, the FAO Conference stated that the concept of genetic resources being the heritage of mankind, as applied in the IUPGRFA was subject to the sovereignty of the States. With the new formulations in Resolution 3/91, the FAO members also felt it necessary to state that the conditions for access to plant genetic resources required further clarification\textsuperscript{28}. This was a highly controversial issue, which caused heated debate. To balance between proponents and opponents and reach to a consensus decision, the Conference again adopted provisions on Farmers' Rights. Building on the negotiations in 1987 and the 1989 resolutions, the Conference decided to have an international fund of plant genetic resources for helping the farmers, which never materialized.

However, even the permanent sovereignty concept when applied can have problems. Because, when the entire natural resources are to be under the ownership of the State, the people who conserved them and preserved them will be deprived of their ownership over them. Thus, there is yet one step to move further to find a solution to that. In fact, if the State alone is made as the owner of the natural resources, the situation will be like the transformation of the concept of ownership over the land that took place in India during the British regime. In India, there was no concept at all like someone owning and selling land. Every land belonged to everyone or to none. The King is said to be the owner of the land of which he is the King.

\textsuperscript{28} C 1991/REP, Conference Resolution 3/91, Paragraph d.
But that was only to show that he can do something *on the land*, for the benefit of all. But when the British came, they insisted for some owners for the land, and gave the tax collectors the title over the land. This deprived those who really tilled and cultivated the land of their ownership over the land, or even on the produce. (more discussions forthcoming, while discussing the position of farmers rights in India in this Chapter). Some vice like this will happen unless the permanent sovereignty concept is used very carefully by balancing the rights of the farmers over their PGR.

Thus, in the international level, this is the beginning of the FR. There are mainly two things to be noted. One is, FR is reaction towards the PBR. This happened only with one thing in focus, and that is access to plant genetic material, or PGR. In all the discussions on FR, one thing is clear that, it is difficult to identify any particular person, or even a community who could be held to have conserved or preserved these PGR or TK associated with them. So, in all the discussions, the proponents were suggesting that, not farmers, or community, but the country of origin should be rewarded. Another thing to be noted is the development of the concept of common heritage into the principle of permanent sovereignty in the Resolution, which is legally non-binding. So, in the forthcoming Chapters on International law, this development is also traced, with due emphasis to the role that is given to those who contributed to the development of some PGR where some communities are identifiable. In these discussions it was also clear that “farmers are to be given some rights while access is allowed to the PGR which they conserved, as a reward, and they should also be allowed to continue to use the PGR of the developed varieties for the future conservation”. So, farmers’ access
to the PGR of the plant breeders, and plant breeders’ access to the PGR of the farmers are thus the central issue of the entire thesis. As this area is not yet conceptualized, and the international law leaves the entire matrix to the national legislation, the shape of FR could be found out only in the national legislations. Thus, this thesis tries to find out what types of rights are given to farmers during their access to the PGR of plant breeders, and during the plant breeders’ access to their PGR and TK.

With this introduction of FR in the international level, there is a need to have a look at this from the Indian perspective, as the thesis concentrates on the Indian aspect. In the international level, a definition of farmer is not attempted at all, as the discussion shows, they are not identifiable easily. International discussions are more in favour of rewarding the country of origin, or the farmers of the country of origin. However, while coming to India, there is still a scope for defining farmer, (as it is in a national plane), following the principles in the international law. While dealing with the farmers in India, there has to be atleast a brief discussion on the history of those who worked and toiled in the field and who ultimately lost their ownership over the land on which they were working. Actually, those who did really work in the field have conserved, preserved and developed the PGR. So, without tracing their history, a great injustice will be done.

1.5 Farmers in India- who are?

Though the word farmer is very familiar to all, it is very difficult to identify farmers or to define them. It is also a fact that, the word farmer will be used sometimes, and the word farmers, at other
times. This is because the very farming activity is a collective one. It is very rare that a single individual does farming activities, or develop or maintain traditional knowledge related to them. But, it is also possible that a single farmer develops new varieties, using the existing ones. Thus also, it is difficult to say that it is his, and only his, as he developed a very marginal change. The definition of farmer is very difficult because of the diversified persons who are involved in farming or agriculture, depending upon their relationship with the land. In fact, as this relationship varies, their rights also should vary. This makes the definition in such a manner that, there is a division in the definition itself so that, rights can be guaranteed accordingly.

In fact in the history of India, when there was no concept of ownership of land, there were people who worked in the land, and they were called as peasants, cultivators, ryots or tillers by the historians. They had good as well as bad times in the hands of the then rulers at different times. It is also a fact that, depending upon the...
relationship with the land, the farmers had different experiences in the past in India. It is a matter of great concern that those who really worked in the scorching sun in the production of agricultural goods, were reduced only to the level of workers, or labourers, due to the land ownership concepts of the British\textsuperscript{30}. Thus, throughout history, the persons who worked in the field toiled and produced food suffered so
much most of the times. This was because, in all the times, agriculture was the only permanent source of revenue to the State, and the peasants were the method through which it could have been extracted.

1.6 Farmers’ Rights over the Seeds in the past (Plant Genetic Resources in the modern sense)

But, throughout history, what is sure is that, the peasants had enjoyed certain amount of freedom with respect to farming. These freedoms they enjoyed were, the freedom to do all the activities relating to farming, till the production. Any external force had demand only over the produce, (produce is the food product, which could be used for consumption) and not over the seeds for the next production. Here, seed means, that part of the plant which contains the hereditary unit of the plant, from which new plant could be produced. Though in the history this part is not expressly stated anywhere, it is to be assumed that the peasants (the name which they had then) could go on doing further production because they had the control over the seeds. Whether during Vedic age, Gupta period, Delhi Sultanate, Mughal period, or British period, the share to the King, or to the State was only in the form of ‘produce’. Actually in some historical descriptions, it is even stated that, during Delhi Sultanate, though there were so many sufferings to the peasants, and they did not have even right over their own persons, “among the undisputed rights, were the right to own seed, cattle and implements”.

It is also to be noted that throughout history, till the right over the land is created by the British, nobody interfered with the

\[31\] Ibid.
peasants’ freedom to use, re-use and exchange the seeds. Even when the British created ownership over the land, and thus separated the owner, and the tiller, the zamindars or the landlords had their eye only on the produce, and not on the seed. This is exactly due to the reason that the produce and not the seed had the economic value. Thus, as all the rulers only wanted to get revenue, they wanted the peasants to continue cultivation, which was possible only if the peasants were having sufficient seed for sowing.

Thus, it should be logically concluded that, those who worked in the field had the freedom to use the reproductive part of the plant, which is mostly the seed. In fact, the rulers only helped and encouraged the peasants in the form of irrigation or loan. This means that the rulers never interfered with the processes in agriculture, which included the freedom to save, use, exchange or re-use the seeds. From these discussions, one thing is clear that, the freedom which the peasants enjoyed is a traditional one. They never claimed any right over the seeds, because there was no need of it, as there was no threat of anyone else claiming right over it then. This means that, whenever there is a threat, this freedom must be retained, and it is possible only in the form of a right. Thus, this freedom turns to be a right. Another argument is also possible that, though the farmers/farmer had the right over the seeds, they did not choose to exercise that right, as seed was never monopolized by anyone then. This was because farming was always a collective venture, where nobody claimed ownership or right over anything. But, a collective right or even an individual right is

kept in abeyance. In a situation where there is a threat to the maintenance of this position like that, this right must be revived.

The main reason why there was no threat was that, seed was not having any economic value. With the advancement of time, and technology, especially the biotechnology, things changed in such a manner that the so called seeds or the reproductive materials assumed an alarming rate of importance. This is because, using the gene technology, the characteristics of one plant could be inserted into another, and the resultant plant can have the produce having both these characteristics. This is called plant breeding, in the simplest sense. The plant breeder who could thus contribute to food production is now rewarded with the PBR. As this is an exclusive right with high economic value, (and also due to the propagation that modern plant breeding alone can meet the food crisis of the globe) plant breeding became an international concern. But, one contradiction exists. Most of the developed countries with advanced technology are poor in biological resources from which alone new plants could be bred. Most of the developing countries are rich in biological resources (includes genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value for humanity) but they lag in technology so that for them these resources remain much unutilized. This situation compelled the developed countries to device measures to have access to the biological resources of the developing countries.

Among the biological resources, for plant breeding the most essential thing is the plant genetic resources (PGR). As this word is the central point of this thesis, some definitions given in international law as well as national laws are given here. Convention
on Biological Diversity defines it as “genetic material of actual or potential value”. Biodiversity and Community Knowledge Protection Act of Bangladesh, 1998 defines it as “resources related to the genetic materials”. (The genetic material means any material of plant, animal, microbial or other origin containing functional units of heredity). The Biodiversity Act of Bhutan, 2003, and Biodiversity Act of South Africa, 2004 (with a very minor difference) defines it as “means any material derived from plants, animals, fungi or microorganisms which contains functional unit of heredity”. The ASEAN Framework Agreement on access to Biological and Genetic Resources, 2000 defines it as inclusive of genetic materials, organisms and parts thereof, population, or any other biotic component of ecosystems with actual or potential use or value.

Thus, the PGR assumed so great a significance that it has become a subject matter of protection in almost all biorich countries.

It is to be undoubtedly said that the PGR of the farmers act as the raw material of the new plant breeding techniques. Thus, as a group of persons who traditionally enjoyed right over the PGR which they produced, the farmers are entitled to the right to use, save, exchange, re-use and even sell the seed (PGR) of even the protected variety. This is apart from their right in the international level, as conservers and preservers of PGR. Thus, in the era of plant breeders, there is a need for a wider definition of farmers so as to give them the respective rights in the matters in which they enjoyed non-intervention from anyone, rather sovereignty.

33 Definition in the Convention on Biological Diversity.
34 Biodiversity and Community Knowledge Protection of Bangladesh, Section 4.
35 Biodiversity Act of Bhutan, Section 52 (j), Biodiversity Act of South Africa, Section 1.
36 ASEAN Framework Agreement, Article 3.
1.7 Farmer-Definition

The farmer require a definition because it is not a single person or group of persons who is/are involved in the production of food, and in the conservation of PGR and TK. Depending upon the nature of the way in which they are engaged in agriculture, the nature of the rights to be given to them also differ. Thus, now there is a need to have a look at the various types of persons, (with the ordinary nomenclature given to them) who are engaged in food production, and conservation of PGR and TK. Another very important matter to be remembered in this context is that, it is not a single person who is involved in all these activities. So, except in very few occasions, the effort of farmers is collective and not capitalistic. This is a striking contradiction with the PBRs which is capitalistic or individualistic in nature.

1.8 Types of persons involved in farming

The persons connected with farming can be numerous in number, with respect to their relationship with the land, the TK, and the direct involvement in the farming activities. There can be persons directly involved in farming activities, who possess the TK in common in farming, without any ownership over the land. Contrast to that, there are persons who do not even step into the field for farming, but engages others to work in the field, with ownership in the land. There are yet another types of person (with ownership over the land) who do not bother even to engage people for working in the farm, but just give the land for lease for others for the purpose of agriculture. There are also people who own the land, as well as work in the land. All these people are somehow or the other responsible for agricultural
production, and conservation of PGR. But only those persons who really work in the field have the traditional knowledge. So, a person who owns the land need not be the owner of the traditional knowledge. A person who owns the land can also have the traditional knowledge. A person who has the traditional knowledge need not be the owner of the land. (It is a fact that a single person holding TK will rarely happen, as it is always held by a group of persons. So, TK should be said to be shared.) In some cases, the land owner will be having the control over the PGR, as he will be managing the production. So, he will own the PGR. Thus, the owner of plant genetic resources and the traditional knowledge can be different, and in some cases it can be the same person.

The diverse types of persons connected with different types of ownership rights make the definition of the farmer a complex one. (One more problem that is intruding here is there are different types of farmers based on the nature of the things they cultivate. These include the horticulture, dairy farming, sericulture, and the cotton farming. This study excludes all the other types of farming than the farming of *food produce* like crops, vegetables, fruits, nuts, cereals, and pulses.) The following types of persons are engaged in agriculture. 1. The agricultural labourer- They are having no ownership or possession of land, and thus they do not employ anybody to work in their land. However, they go for work in others land. 2. The poor farmer- As the name indicates, they are called farmers, as they own or possess land, however small the area may be. They work in their own land, but do not employ anybody else to work in their land, and as the income from their small holding is so meager, they work in others land also. 3. The medium farmer- He is also owning or possessing land, works in his
own land, does not employ anyone in his land, and the difference with the second type is that, he does not work in others land. 4. The rich farmer- The rich farmer, who has almost all the characteristics of the medium farmers, differs only in that, he employs others in his land, as he has more area of land, and cannot manage it alone. 5. The capitalist farmer lord- These types of farmers, who are almost like the bourgeoisie, in the language of Karl Marx, own huge areas of land, do not work in the land, but employs others in the land. Here, he though not working at all, and make others work, and live like a parasite, is still doing something in his land, in the process of production. 6. The feudal farmer lord- In this type of farmer is seen the gravest form of exploiter, in the language of Marx, as he never does anything towards production, rather just uses his land as a means to make money, as the money lenders do with money. This type of farmer never keeps the land with himself, though he owns handsome acres of land, neither works on the land, nor employs anyone to work on it. He gives it for lease, and collects money from the lessee.

Now, in the context of plant breeding, the most important aspect that comes into picture is the PGR and TK. One, is the farmers’ using, re-using, saving, and exchanging the PGR of the plant breeders, and the other is, the plant breeders’ accessing to the farmers’ PGR and TK. As was said before, thus, the crux of the whole thesis can be summarized in a formula thus,

Farmers’ access to plant breeders’ PGR (and TK) and plant breeders’ access to farmers’ PGR.

As it is so, only the issues which are related to this theme need to come while defining the farmers. So, more than a relationship
to the land in the form of ownership, what matters here is, who is handling, or controlling, or holding the PGR and the TK. In other words, who are all going to be affected by the plant breeders’ access to the PGR or the TK (calling this aspect as (a)), and by denial of access to, or the restriction regarding the use, or poor or non-performance of the PGR of the plant breeders’ variety (calling this aspect as (b)) are to be brought within the definition of farmer.

Regarding the first aspect (a), the persons who are going to be affected are, those who conserve and preserve, and hold the PGR and TK, by being engaged in farming (if there are many other common people who share this knowledge, without being engaged in farming, they are not included). Regarding the second aspect (b), all those who use the PGR for food production are affected. In this case, the person’s relationship with the land will be a counting factor because a person who is working in other’s farm will not be controlling the seed, and he will not be affected by the poor performance, or non-performance of the seed. Thus, these facts should be reflected in the definition of farmer.

Before arriving at a definition, the existing definition of farmers in various plant variety protection, and biological diversity protection legislations in the world may be examined. Actually although there are various legislations all over the globe for the protection of PGR of the farmers\(^\text{37}\), these legislations are giving a collective right to farming community as a group, calling them local community or indigenous people. Thus, the definition given is not as

\(^{37}\) The Biodiversity Act of Bhutan 2003, A Proclamation to provide for Access to Genetic Resources and Community Knowledge and Community Right of Ethiopia 2006, The ANDEAN Common Regime on Access to Genetic Resources, and Biodiversity Act, 2004 of South Africa, are some of them.
farmer. Likewise, even though there are many plant variety protection legislations in the world\textsuperscript{38}, these legislations give more importance only to plant breeders, and farmers find a very little role in these. Due to this reason the word farmer is defined only in a very few legislations, among which the Indian legislations stand as remarkable.

The Protection of Plant Varieties and Farmers Rights Act, 2001 of India defines a farmer as any person who—

“(i) cultivates crops either by cultivating the land himself; or

(ii) cultivates crops by directly supervising the cultivation of land through any other person; or

(iii) conserves and preserves, severally or jointly, with any person any wild species or traditional varieties or adds value to such wild species or traditional varieties through selection and identification of their useful properties\textsuperscript{39}.”

The PPVFRA defines even an agricultural labourer as a farmer, as the only ingredient necessary is, cultivation of crops, irrespective of the ownership over the land. However, even a landlord is defined as a farmer, even if he does not cultivate it himself, but only supervises. An addition that is found in this definition is, a person who conserves and preserves, or adds value to wild or traditional varieties are also considered as farmer. This is a change in the definition of


\textsuperscript{39} PPVFRA, Section 2 (k)
farmer which is caused due to the new plant breeders rights, and as this Act deals with PBRs as well this change is also adopted in the definition.

Though this definition covers many aspects of farmer, there are certain missing links, in the light of the central theme of this thesis. As the formula above showed, the definition should take into account two types of persons connected with farming. Among the various types of farmers mentioned above, the agricultural labourers actually work in the field, and they hold TK. But as the production is under the control of someone else, (it can be a feudal landlord farmer, or a person who took the land for lease from the capitalist landlord farmer), the agricultural labourers cannot be said to have control over the PGR. But, as far as the poor farmer, medium farmer and the rich farmer are concerned, they hold the TK as well as the PGR. The feudal landlord farmer surely holds the PGR, but he may or may not be holding the TK. But when it comes to benefit sharing, the persons who added to the value of the plant genetic resource, the preservers, and holders of the traditional knowledge, and the PGR will have to be considered as farmers. The farmers’ rights are needed in the areas of (a) access to TK (b) access to PGR (c) access to the PGR (right to use, save, exchange and sell seed) of the plant breeders’ variety. Along with this, while access is given to the farmers’ PGR and TK, they need some rights over the same, like property rights, as in the case of plant breeders. So, the custodians, preservers and developers of TK and PGR will be eligible to get the rights associated with these two. The right to use, save, exchange and re-use seeds is due to all those who are engaged in farming, who control the production rather, who are going to handle seeds for further production. So, the
definition should cover all these persons separately, as their respective rights are also separate.

But one thing that is to be noted here is, in the international level, the rights of the farmers are recognised to their efforts in conserving, preserving and making available the PGR for further development. It follows from this that, only persons who do the above are entitled to FR. Thus, if there are a group of persons who were identified as the conservers of a particular variety of rice which is very commonly available, they can be given rights over the same. Based on the same reason, they are also entitled to the right to use, save, exchange and re-use the seeds of even the protected variety. Suppose that a person (in India) who gets engaged in farming after retirement is using the seeds of the protected variety. Are they entitled to the right to use, save, exchange, and sell the same? The answer is no based on the above reason for FR, because the latter person did not conserve, preserve and made available the PGR to the world. If that is the case, he will not be even called a farmer. Thus, he will not be entitled to the rights emanating from the right to use, called the right to compensation in case of non performance or poor performance of the seeds. (this is a right given in the PPVFRA).

So, unlike in the international level, in India, basis for rights given to the farmers during the first part of the central theme (rights when they access to the PGR of plant breeders), and the rights given during the second part of the central theme (while the plant breeders access to the PGR and TK) should be bifurcated. This is to help the farmers to continue in the profession, even if they did not contribute anything towards conservation or preservation of PGRFA,
or TK. This is also needed to see that the small scale farmers do not disappear from the profession, thereby leading to the monopolization of seeds by some multinational corporations.

In the light of this discussion, thus, the definition of the farmer is,

Farmers is defined as a person or group of persons who are engaged in farming directly or by supervision by engaging others and who

(a) Conserve or preserve traditional knowledge associated with the plant genetic resources

(b) Hold the control of PGR and

(b) Save, use, exchange and re-use plant genetic resources.

As per this definition, the rights associated during access to TK go to those who hold TK. Rights associated with access to PGR go to those who hold the PGR, and the rights regarding the use, save, exchange, and re-use of PGR of the plant breeder go to those who are engaged in farming and are responsible for further production.

Property rights can be given to those who conserved, preserved or developed the respective PGR or TK. In this definition one question that can be asked is, is a corporate farmer, who does agriculture by employing agricultural labourers just for trading (selling, marketing, distributing, or exporting) in seed is covered by this definition. If he is covered, then he should also get the right to use, save, exchange and sell the seed of the protected variety. But, such farmers have not contributed anything to the conservation or preservation of the PGR. For them the seeds are just commodities. So, any right relating to the conservation and preservation are not to be
available to them, like the property rights and related rights like the 
PIC and benefit sharing. However, regarding the right to use, save, 
exchange and sell the seed, as the corporate farmer is controlling the 
seed, and the non-performance of the seed is going to affect him, one 
can argue that he should also be given this right.

The reason for giving this right to the farmer was explained 
above. It is to see that farmers do not disappear due to lack of this 
right. In the case of a corporate farmer, he has the capacity to 
purchase the seed every time. Also, the corporate farmer is in many 
ways equal to the plant breeder. So, such a farmer should be outside 
the purview of the definition of farmer for the purpose of this thesis. 
However, for the non-performance of the seed, such farmers can make 
use of the Seed Laws or Consumer Laws. It is to be noted that the 
thesis suggests that it is the State’s duty to find out who conserved, 
preserved or developed which PGR or TK, and to give them 
respective rights and to protect them. In such a situation, if at all a 
corporate farmer is also found to have contributed to the conservation 
and preservation of PGR or TK, in any capacity, he will also be 
entitled to the FR.

These persons are thus covered by the definition of farmer. They have their own rights in relation to the contribution they have 
made in the farming. However, as the international law is vague 
regarding the concept of FR, there is a need to examine what all 
dimensions can be given to FR, for example, what all rights can be 
given to farmers during the phases of the theme. That is, while plant 
breeders access to the PGR and TK of the farmers, what all rights are 
possible to be given to the farmers, and what jurisprudence will 
support such rights, and what all rights are to be given to the farmers,
while they seek access to the PGR of the plant breeder. In the forthcoming Chapters, it will be examined as to, to what extent these rights are given to the farmers, or new rights are given to them. In other words, what is the shape given to the FR from its initial shape through international as well as the Indian laws which are made in pursuance of that will be discussed in the following Chapters. A conceptualization of FR is tried here now.

1.9 How to fill the gaps in the Farmers’ Rights Concept

In fact, while access is given to the PGR of the farmers, one thing should be remembered, and it is that, for a person who develops a new variety using this PGR is going to be given an Intellectual Property Right called the PBR. This shows that there is a possibility of privatizing the natural resources like the plants. Or that, property rights can be given on plant varieties. The counterpart of this argument regarding FR should be that, same kind of a property right should be given to the farmers as well. So, there is a scope of developing a property regime for FR. There can be many rights from the Human Rights angle as well. These can be summarized as below.

The plant breeders are given the IPR called the PBR because of the intellectual input in developing a new variety, which is of various advantages to the society. While examining the same regarding the PGR conserved and preserved by the farmers, it should be said that there has to be intellectual input in identifying the best PGR, and conserving them. Regarding TK, it is nothing but the constant experimentation and observation of the farmers which made it possible to identify the TK associated with a particular PGR. Without intelligence, even the conservation and preservation of both
these are not possible. So, there is every justification for developing a *sui generis* law for the protection of Farmers’ Rights as an IPR, which could be left to the national legislations. In fact, this will be a collective right, as different from an individual right. The usual novelty criteria will have no significance at all. The advantage of having such property right should be to avoid misappropriation of the PGR and TK, and to allow its usage only by paying compensation to allowed set of purposes.

In fact, although there are mainly three theories on IPR, called the theory of Locke, Hegel and Marx, apart from Marx the other two do not favour a collective right. Locke considers labour as the cause for entailing property to someone.\(^{40}\) In fact, if this theory is to be applied in the case of farmers who conserve and preserve the TK, it could have worked well, based on the labour theory. However, Locke is so specific on the individualistic aspect that, based on his theory a collective right cannot be recognized. Because from a collective endeavor, it is not possible to find out what is the amount of labour one applied.

Hegel is also not for a collective property. His entire theory rests on the premise of “free will”, using which a person can

\(^{40}\) The crux of Locke’s theory is reflected in this ““Though the earth and all inferior creatures be common to all men, yet every man has a "property" in his own "person." This nobody has any right to but himself. The "labour" of his body and the "work" of his hands, we may say, are properly his. Whatevsoever, then, he removes out of the state that Nature hath provided and left it in, he hath mixed his labour with it, and joined to it something that is his own, and thereby makes it his property. It being by him removed from the common state Nature placed it in, it hath by this labour something annexed to it that excludes the common right of other men. For this "labour" being the unquestionable property of the labourer, no man but he can have a right to what that is once joined to, at least where there is enough, and as good left in common for others". John Locke, *Two Treatises on Government*, Book II, chapter 5, section 26. Available at http://www.lonang.com/exlibris/locke/loc-205.htm. Visited on 17-01-2010.
appropriate anything as his own\textsuperscript{41}. as he stresses on the free will of an individual, the theory is pro-private ownership, as against collective ownership, as in collective ownership, the individual will cannot be separated from the common property. He says this in clear terms thus:

“Since property makes objective my personal individual will, it is rightly described as a private possession. On the other hand, common property, which may be possessed by a number of separate individuals, is a mark of a loosely joined company, in which a man may or may not allow his share to remain at his own choice\textsuperscript{42}”. (emphasis added).

However, Marx is for collective ownership, and against private property. However, he does not support individual intellectual property rights. According to him, the intellectual creations of individual nations become “common property\textsuperscript{43}”.

Giving this property right, or some other protection in the form of recognition is also part of International Human Rights Law, and some other laws also. The ICCPR and ICESCR recognizes\textsuperscript{44} the right to self determination of the people to freely dispose of their

\textsuperscript{41} According to Hegel,
“A person has the right to direct his will upon any object, as his real and positive end. The object thus becomes his. As it has no end in itself, it receives its meaning and soul from his will. Mankind has the absolute right to appropriate all that is a thing.” And, “To have something in my power, even though it be externally, is possession. The special fact that I make something my own through natural want, impulse or caprice, is the special interest of possession. But, when I as a free will am in possession of something, I get a tangible existence, and in this way first became an actual will. This is the true and legal nature of property, and constitutes its distinctive character”. G.W.H. Hegel, \textit{Philosophy of Right}, sections 44, and 45. Available at \url{http://socserv.mcmaster.ca/econ/ugcm/3ll3/hegel/right.pdf}. Visited on 17-01-2010.

\textsuperscript{42} \textit{Id.}, Section 46.


\textsuperscript{44} ICCPR, and ICESCR, Article 1.
natural resources. The African Charter on Human and People’s Rights more clearly elucidates this aspect in the following manner.

“1. All peoples shall freely dispose of their wealth and natural resources. This right shall be exercised in the exclusive interest of the people. In no case shall a people be deprived of it.

2. In case of spoliation the dispossessed people shall have the right to the lawful recovery of its property as well as to an adequate compensation.

3. The free disposal of wealth and natural resources shall be exercised without prejudice to the obligation of promoting international economic cooperation based on mutual respect, equitable exchange and the principles of international law.

4. States parties to the present Charter shall individually and collectively exercise the right to free disposal of their wealth and natural resources with a view to strengthening African unity and solidarity.

5. States parties to the present Charter shall undertake to eliminate all forms of foreign economic exploitation particularly that practiced by international monopolies so as to enable their peoples to fully benefit from the advantages derived from their national resources.45”

This is reiterated in the Declaration on the Rights of Indigenous People also, in more express terms, and there is every possibility that the farmers will come under the purview of indigenous

people, and the principle laid down in the Declaration applies to them as well. To quote those important provisions,

“1. Indigenous peoples have the right to the lands, territories and resources which they have traditionally owned, occupied or otherwise used or acquired.

2. Indigenous peoples have the right to own, use, develop and control the lands, territories and resources that they possess by reason of traditional ownership or other traditional occupation or use, as well as those which they have otherwise acquired.

3. States shall give legal recognition and protection to these lands, territories and resources. Such recognition shall be conducted with due respect to the customs, traditions and land tenure systems of the indigenous peoples concerned.”

From this, it is clear that some kind of a collective property right is possible over the natural resources for those who conserved them. Thus, in a sense, the international law is in its infant stage in developing a collective property right over the natural resources. However, there are also hurdles in realizing FR especially including property right in it. These hurdles are, that “FR are not related to any international legal framework. The concept is difficult to judge from the perspective of IPR theory, because it is not based on a fundamental principle of IPR, the private exploitation right”.\(^{46}\)

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Also, even *equity, fairness and justice* demand that somebody who took the pain to conserve and preserve something should have the first priority over it, whether in the form of property right or not. However, apart from property right, there can be another privilege which will also stem purely from the fairness concept, and it is the sharing of benefit. As the preservation of PGR and TK helps the plant breeders to save much of their time, energy, and money, proportionate to that, a share of the benefit accruing to them should be given to the farmers who did seventy percentage of the job even before the PGR reached the hands of the plant breeders.

Not only from an equity point of view, the profounder of labour theory John Locke in various ways acknowledge the rights of all those who laboured and added value to the natural products. But, in no other way than the following, has he said it so categorically. Locke points out:

“An acre of land that bears here twenty bushels of wheat, and another in America, which, with the same husbandry, would do the like, are, without doubt, of the same natural, intrinsic value. But yet the benefit mankind receives from one in a year is worth five pounds, and the other possibly not worth a penny; if all the profit an Indian received from it were to be valued and sold here, at least I may truly say, not one thousandth. It is labour, then, which puts the greatest part of value upon land, without which it would scarcely be worth anything; it is to that we owe the greatest part of all its useful products; for all that the straw, bran, bread, of that acre of wheat, is more worth than the product of an acre of as good land which lies waste is all the effect of labour. For it is not barely the ploughman's pains, the reaper's and thresher's toil, and the baker's sweat, is to be
counted into the bread we eat; the labour of those who broke the oxen, who digged and wrought the iron and stones, who felled and framed the timber employed about the plough, mill, oven, or any other utensils, which are a vast number, requisite to this corn, from its sowing to its being made bread, *must all be charged on the account of labour, and received as an effect of that;* Nature and the earth furnished only the almost worthless materials as in themselves. It would be a strange catalogue of things that industry provided and made use of about every loaf of bread before it came to our use if we could trace them; iron, wood, leather, bark, timber, stone, bricks, coals, lime, cloth, dyeing -drugs, pitch, tar, masts, ropes, and all the materials made use of in the ship that brought any of the commodities made use of by any of the workmen, to any part of the work, all which it would be almost impossible, at least too long, to reckon up\(^{47}\) (emphasis added).

This shows that all those who contributed to the development of a new plant variety will have some rights. This could be termed as the right to a share in the benefit, which is a right, and not a charity.

Applying Marxian analysis, the plant breeders’ benefit is a capital, which is the product of the collective labour of the farmers also. And the plant breeders are entitled only to a *personal property* from that, the rest belong to the society, and to all those who labored for the creation of that variety, and the related capital. If the plant breeders do not share any of the benefit with the farmers, then it becomes private property, and Marx is for abolition of it. So, the plant breeders are entitled only to that portion of the amount which Marx

\(^{47}\) John Locke, Chapter 5, Section 43.
calls as personal property, for his maintenance and livelihood. The rest will have to be the social property, and the personal properties of the farmers, for enabling them to sustain the varieties they were maintaining. So, the share of the benefit is going for a social purpose. Surely, here also farmers are entitled to more rights over the benefits than the plant breeders.

It is even possible to argue that share of the benefit need not be in monetary terms. The farmers are also entitled to the product of the plant breeders, which means the seeds. Thus, as part of right to benefit sharing, farmers also get a right to use the seeds of the new varieties, as their labour is also involved in the creation of it.

Thus, the most important aspects of Farmers Rights could be property rights, and benefit sharing. In the forthcoming Chapters, while discussing on the reaction, or the development of International Law in this matter, the main examination is as to what is the shape given to the Farmers Rights there, keeping these major concerns (possibilities) in mind.

As was pointed out earlier, the central theme of the thesis revolves around, Farmers’ Access to the PGR of Plant Breeders, and Plant Breeders’ Access to the PGR and TK of the Farmers. This is because, the very creation of FR as a reaction to the PBR was a forced one, due to the economic importance of the PGR of the farmers as well as the plant breeders. This is the area where both the farmers and the plant breeders come into contact with each other, and this is the only space where rights are needed for the farmers. Now, a brief outline about the structure of the forthcoming Chapters is given.
The Research Questions that are answered in the forthcoming Chapters are, (1) What are the international laws which have impact in India which deal with the farmers access to the PGR of the plant breeders, and the plant breeders’ access to the PGR and TK of the farmers?. In order to proceed to the next Research Questions, answer to this question is necessary. There are mainly four international laws in this regard. The Trade Related Aspects of Intellectual Property Rights (TRIPS), the Union for the Protection of Plant Varieties (UPOV), the Convention on Biological Diversity (CBD) and the International Treaty on the Protection of Plant Genetic Resources for Food and Agriculture (ITPGRFA). TRIPS and UPOV deal with the farmers’ access to the PGR of the plant breeders, and CBD deals with the plant breeders’ access to the PGR and TK of the farmers. ITPGRFA deals with both. On the discussion on UPOV the Research Question examined is, “What is the nature of rights given to the farmers in UPOV as far as farmers’ access to the PGR of the plant breeders (right to use, save, exchange, re-use and sell the seed) is concerned”? On the discussion on CBD the Research Question is, “What is the nature of rights given to the farmers, while plant breeders seek access to the PGR and TK of the farmers?” On the discussion of ITPGRFA, the Research Question is, “What is the nature of farmers’ rights that is recognized in ITPGRFA during both the situations?” In all these Chapters, the adequateness of these measures is also examined.

The next broader Research Question is, “What are the laws in India which deal with both these issues?” The answer is, there are mainly two legislations in India in this regard. The Biological Diversity Act (BDA) and the Protection of Plant Varieties and
Farmers’ Rights Act (PPVFRA). The BDA deals with plant breeders’ access to the PGR and TK of farmers. The PPVFRA deals with farmers’ access to the PGR of plant breeders, and partially with the plant breeders’ access to the farmers PGR and TK. On both these legislations, the question asked is, what is the nature of farmers’ rights that are developed in both the situations of access to PGR, and how effective they are, and how India has used the space left by the International laws.

Discussion on UPOV is done in Chapter II, and that of CBD is Chapter III. ITPGRFA is discussed in Chapter IV. BDA, and PPVFRA are discussed in Chapters V and VI respectively. Now, the question to be asked is, while creating an exclusive right to the plant breeders, has the UPOV left any space for the farmers over the PGR of the plant breeders? Is that space enough? Anything more is required? If so, how to ensure its compliance? These questions are answered in the next Chapter.