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Protection of plant varieties: A device for tribal empowerment

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Abstract---A group of people dwelling within a common territorial boundary having common ancestors and mores, believing in common morals, distinct of other similar groups which existed even before the concept of nation states is viewed as Tribe. More often the tribes and tribal are discussed with an attitude of *holier than thou* approach of regulating deforestations, tribal rights, ownership of tribal lands and what not but the question always persist; are we honest to ourselves when we argue on these. The tribal rights include ownership over both the land and the cherished biodiversity. The statutory provisions are in place for the protection of extant varieties of plants; those existing in the nature, whose ownership lies with the indigenous people which includes their beneficial usages which come as something which may be termed as traditional wisdom. The rapid deforestation is not only endangering the flora, diminishing the genome treasure and even bringing an end to the tribal. In this research paper an attempt is made to critically appreciate the statutory provisions related to the protection of extant varieties of plants and to find out the measures which may be taken for achieving the legislative intent.

Keywords---tribal, rights, extant varieties.

Introduction

A group of people dwelling within a territorial boundary, having common ancestors and mores, believing in common morals, distinct of other similar groups, who existed even before the concept of nation states developed and continue to exist are those who may be defined as 'tribe'. More often the tribes and the tribal and their issues are discussed and debated with an attitude of *holier than thou* approach, whenever the regulating of deforestations, tribal rights, ownership of tribal lands and what not concerning them is put forth, but still the question always persist; are we honest to ourselves when we argue on these and how far we are really aware and willing to accept their concerns.

The tribal rights, whenever be discussed is premised around their ownership of their land and the biodiversity in which they dwell and undoubtedly it covers all the resources including the flora and fauna. The tribal rights or more appropriately as the nomenclature provided by the international community; the rights of the indigenous people is recognized and protected not only by the international conventions but are further upheld by the member countries through their domestic statutory provisions. Whether the *Red-Indians*', the *Aborigines*', the *Maoris*', the *Zulus*' and the *Bheels, Gonds, Kols, Nagas* whoever they may be, their ownership rights persists and in no manner it is something which is bestowed over them by the welfare arm of the State but it is their rightful claim which can never be alienated from them in whatever guise the claim may be; of their being brought into the so called civilized world, development, modernization or under any other pretext with more attractively camouflaged semblance.

The rights of indigenous people therefore should be accepted as a matter of natural right rather than requiring any recognition from sovereign power or any legislative action. The struggles witnessed all over the world between the so categorized civilized people and the indigenous population owes its cause to the unacceptability and recognition of their due claims by the foreigners. Once these rights would have been recognized and taken care of, such conflicts could have been avoided a long ago. The progression of recognizing and protecting the rights of tribal or the indigenous people are fundamentally an argument for empowerment of tribal which in the Indian perspective is premised over three distinctive dimensions;

- I. The Fundamental rights enshrined in the Constitution of India.
- II. The Constitutional provisions recognizing and providing protection to the tribal interests.
- III. The Statutes providing protection to the indigenous knowledge and common heritage.

The fundamental rights are guaranteed to all the citizens of India irrespective of them being a tribal or not. The provisions such enshrined under the Part – III of the Indian Constitution provides for equality before the law and equal protection of law¹ ensuring equal treatment to all the citizens irrespective of their religion,

¹ Article – 14

race, caste, sex or their place of birth² and assures equality of opportunity in matters of employment or appointment in the government office.³ Further all the

The State shall not deny to any person equality before the law or the equal protection of the laws within the territory of India.

² Article – 15

(1) The State shall not discriminate against any citizen on grounds only of religion, race, caste, sex, place of birth or any of them.

(2) No citizen shall, on grounds only of religion, race, caste, sex, place of birth or any of them, be subject to any disability, liability, restriction or condition with regard to— (a) access to shops, public restaurants, hotels and places of public entertainment; or (b) the use of wells, tanks, bathing ghats, roads and places of public resort maintained wholly or partly out of State funds or dedicated to the use of the general public.

(3) Nothing in this article shall prevent the State from making any special provision for women and children.

(4) Nothing in this article or in clause (2) of article 29 shall prevent the State from making any special provision for the advancement of any socially and educationally backward classes of citizens or for the Scheduled Castes and the Scheduled Tribes.

(5) Nothing in this article or in sub-clause (g) of clause (1) of article 19 shall prevent the State from making any special provision, by law, for the advancement of any socially and educationally backward classes of citizens or for the Scheduled Castes or the Scheduled Tribes in so far as such special provisions relate to their admission to educational institutions including private educational institutions, whether aided or unaided by the State, other than the minority educational institutions referred to in clause (1) of article 30.

³ Article – 16

(1) There shall be equality of opportunity for all citizens in matters relating to employment or appointment to any office under the State.

(2) No citizen shall, on grounds only of religion, race, caste, sex, descent, place of birth, residence or any of them, be ineligible for, or discriminated against in respect of, any employment or office under the State.

(3) Nothing in this article shall prevent Parliament from making any law prescribing, in regard to a class or classes of employment or appointment to an office under the Government of, or any local or other authority within, a State or Union territory, any requirement as to residence within that State or Union territory prior to such employment or appointment.

(4) Nothing in this article shall prevent the State from making any provision for the reservation of appointments or posts in favour of any backward class of citizens which, in the opinion of the State, is not adequately represented in the services under the State.

(4A) Nothing in this article shall prevent the State from making any provision for reservation 3[in matters of promotion, with consequential seniority, to any class] or classes of posts in the services under the State in favour of the Scheduled Castes and the Scheduled Tribes which, in the opinion of the State, are not adequately represented in the services under the State.

(4B) Nothing in this article shall prevent the State from considering any unfilled vacancies of a year which are reserved for being filled up in that year in accordance with any provision for reservation made under clause (4) or clause (4A) as a separate class of vacancies to be filled up in any succeeding year or years and such class of vacancies shall not be considered together with the vacancies of the year in which they are being filled up for determining the ceiling of fifty per cent reservation on total number of vacancies of that year.

(5) Nothing in this article shall affect the operation of any law which provides that the incumbent of an office in connection with the affairs of any religious or denominational institution or any member of the governing body thereof shall be a person professing a particular religion or belonging to a particular denomination

citizens are guaranteed of freedom of speech and expression, to profess any faith, to form associations, to move and settle in any part of the country and are free to profess any occupation unless barred by any law or with reasonable restrictions.⁴ The second dimension is of the constitutional provisions recognizing and providing protection to the tribal interests and there are many provisions which specifically safeguard the interests of the tribal community which may be enumerated under the following categories;

1. Educational and Cultural Rights under Articles 15(4)⁵, 29⁶, 46⁷ and 350⁸
2. Social Rights under Articles 23⁹ and 24¹⁰

⁴ Article – 19 (1) All citizens shall have the right—

- (a) to freedom of speech and expression;
 - (b) to assemble peaceably and without arms;
 - (c) to form associations or unions or co-operative societies;
 - (d) to move freely throughout the territory of India;
 - (e) to reside and settle in any part of the territory of India;
 - (g) to practise any profession, or to carry on any occupation, trade or business.
- (2) Nothing in sub-clause (a) of clause (1) shall affect the operation of any existing law, or prevent the State from making any law, in so far as such law imposes reasonable restrictions on the exercise of the right conferred by the said sub-clause in the interests of the sovereignty and integrity of India, the security of the State, friendly relations with foreign States, public order, decency or morality, or in relation to contempt of court, defamation or incitement to an offence.
- (3) Nothing in sub-clause (b) of the said clause shall affect the operation of any existing law in so far as it imposes, or prevent the State from making any law imposing, in the interests of the sovereignty and integrity of India or public order, reasonable restrictions on the exercise of the right conferred by the said sub-clause.
- (4) Nothing in sub-clause (c) of the said clause shall affect the operation of any existing law in so far as it imposes, or prevent the State from making any law imposing, in the interests of 5[the sovereignty and

⁵ Article – 15 (4) Nothing in this article or in clause (2) of article 29 shall prevent the State from making any special provision for the advancement of any socially and educationally backward classes of citizens or for the Scheduled Castes and the Scheduled Tribes.

⁶ Article – 29 (1) Any section of the citizens residing in the territory of India or any part thereof having a distinct language, script or culture of its own shall have the right to conserve the same. (2) No citizen shall be denied admission into any educational institution maintained by the State or receiving aid out of State funds on grounds only of religion, race, caste, language or any of them.

⁷ Article – 46

The State shall promote with special care the educational and economic interests of the weaker sections of the people, and, in particular, of the Scheduled Castes and the Scheduled Tribes, and shall protect them from social injustice and all forms of exploitation.

⁸ Article – 350

Every person shall be entitled to submit a representation for the redress of any grievance to any officer or authority of the Union or a State in any of the languages used in the Union or in the State, as the case may be.

⁹ Article – 23

(1) Traffic in human beings and begar and other similar forms of forced labour are prohibited and any contravention of this provision shall be an offence punishable in accordance with law.

(2) Nothing in this article shall prevent the State from imposing compulsory service for public purposes, and in imposing such service the State shall not make any discrimination on grounds only of religion, race, caste or class or any of them.

3. Economic Rights under Articles 244¹¹ and 275¹²

4. Political Rights under Articles 164(1)¹³, 243D¹⁴, 330¹⁵, 334(a)¹⁶ and 371¹⁷

¹⁰ Article – 24

No child below the age of fourteen years shall be employed to work in any factory or mine or engaged in any other hazardous employment.

¹¹ Article – 244

(1) The provisions of the Fifth Schedule shall apply to the administration and control of the Scheduled Areas and Scheduled Tribes in any State 1*** other than the States of Assam, Meghalaya, Tripura and Mizoram.

(2) The provisions of the Sixth Schedule shall apply to the administration of the tribal areas in the States of Assam, Meghalaya, Tripura and Mizoram.

¹² Article – 275

(1) Such sums as Parliament may by law provide shall be charged on the Consolidated Fund of India in each year as grants-in-aid of the revenues of such States as Parliament may determine to be in need of assistance, and different sums may be fixed for different States: Provided that there shall be paid out of the Consolidated Fund of India as grants-in-aid of the revenues of a State such capital and recurring sums as

may be necessary to enable that State to meet the costs of such schemes of development as may be undertaken by the State with the approval of the Government of India for the purpose of promoting the welfare of the Scheduled Tribes in that State or raising the level of administration of the Scheduled Areas therein to that of the administration of the rest of the areas of that State: Provided further that there shall be paid out of the Consolidated Fund of India as grants-in-aid of the revenues of the State of Assam sums, capital and recurring, equivalent to—

(a) the average excess of expenditure over the revenues during the two years immediately preceding the commencement of this Constitution in respect of the administration of the tribal areas specified in Part I of the table appended to paragraph 20 of the Sixth Schedule; and

(b) the costs of such schemes of development as may be undertaken by that State with the approval of the Government of India for the purpose of raising the level of administration of the said areas to that of the administration of the rest of the areas of that State.

(1A) On and from the formation of the autonomous State under article 244A,—

(i) any sums payable under clause (a) of the second proviso to clause (1) shall, if the autonomous State comprises all the tribal areas referred to therein, be paid to the autonomous State, and, if the autonomous State comprises only some of those tribal areas, be apportioned between the State of Assam and the autonomous State as the President may, by order, specify;

(ii) there shall be paid out of the Consolidated Fund of India as grants-in-aid of the revenues of the autonomous State sums, capital and recurring, equivalent to the costs of such schemes of development as may be undertaken by the autonomous State with the approval of the Government of India for the purpose of raising the level of Administration of that State to that of the administration of the rest of the State of Assam.

(2) Until provision is made by Parliament under clause (1), the powers conferred on Parliament under that clause shall be exercisable by the President by order and any order made by the President under this clause shall have effect subject to any provision so made by Parliament:

Provided that after a Finance Commission has been constituted no order shall be made under this clause by the President except after considering the recommendations of the Finance Commission.

¹³ Article – 164

(1) The Chief Minister shall be appointed by the Governor and the other Ministers shall be appointed by the Governor on the advice of the Chief Minister, and the Ministers shall hold office during the pleasure of the Governor:

5. Employment Rights under Articles 15(4)¹⁸, 16(4)¹⁹ and 16(4A)²⁰

Provided that in the States of Chhattisgarh, Jharkhand], Madhya Pradesh and Odisha there shall be a Minister in charge of tribal welfare who may in addition be in charge of the welfare of the Scheduled Castes and backward classes or any other work.

¹⁴ Article – 243 D

(1) Seats shall be reserved for—

(a) the Scheduled Castes; and

(b) the Scheduled Tribes, in every Panchayat and the number of seats so reserved shall bear, as nearly as may be, the same proportion to the total number of seats to be filled by direct election in that Panchayat as the population of the Scheduled Castes in that Panchayat area or of the Scheduled Tribes in that Panchayat area bears to the total population of that area and such seats may be allotted by rotation to different constituencies in a Panchayat.

¹⁵ Article – 330

(1) Seats shall be reserved in the House of the People for—

(a) the Scheduled Castes;

(b) the Scheduled Tribes except the Scheduled Tribes in the autonomous districts of Assam; and

(c) the Scheduled Tribes in the autonomous districts of Assam.

(2) The number of seats reserved in any State or Union territory for the Scheduled Castes or the Scheduled Tribes under clause (1) shall bear, as nearly as may be, the same proportion to the total number of seats allotted to that State or Union territory in the House of the People as the population of the Scheduled Castes in the State or Union territory or of the Scheduled Tribes in the State or Union territory or part of the State or Union territory, as the case may be, in respect of which seats are so reserved, bears to the total population of the State or Union territory.

(3) Notwithstanding anything contained in clause (2), the number of seats reserved in the House of the People for the Scheduled Tribes in the autonomous districts of Assam shall bear to the total number of seats allotted to that State a proportion not less than the population of the Scheduled Tribes in the said autonomous districts bears to the total population of the State.

Explanation.—In this article and in article 332, the expression “population” means the population as ascertained at the last preceding census of which the relevant figures have been published:

Provided that the reference in this *Explanation* to the last preceding census of which the relevant figures have been published shall, until the relevant figures for the first census taken after the year 2026 have been published, be construed as a reference to the 2001 census.

¹⁶ Article – 334 Notwithstanding anything in the foregoing provisions of this Part, the provisions of this Constitution relating to—

(a) the reservation of seats for the Scheduled Castes and the Scheduled Tribes in the House of the People and in the Legislative Assemblies of the States

¹⁷ Article – 371 Special provision with respect to the States of Maharashtra and Gujarat, Nagaland, Assam, Manipur, Andhra Pradesh or Telangana, Sikkim, Mizoram, Arunachal Pradesh, Goa and Karnataka.

¹⁸ Article – 15 (4) Nothing in this article or in clause (2) of article 29 shall prevent the State from making any special provision for the advancement of any socially and educationally backward classes of citizens or for the Scheduled Castes and the Scheduled Tribes.

¹⁹ Article – 16 (4) Nothing in this article shall prevent the State from making any provision for the reservation of appointments or posts in favour of any backward class of citizens which, in the opinion of the State, is not adequately represented in the services under the State.

²⁰ Article – 16 (4A) Nothing in this article shall prevent the State from making any provision for reservation in matters of promotion, with consequential seniority, to any class or classes of posts in the services under the State in favour of the Scheduled Castes and the Scheduled Tribes which, in the opinion of the State, are not adequately represented in the services under the State.

Having discussed all these earmarked provisions of the protection of the rights of the tribal, need arises to revisit the fundamental rights for the most affluent of the rights, the wider connotation of the Article – 21 assuring the protection of life and personal liberty which very aptly be interpreted to include the *Right to Food* as an integral feature to provide efficacy to the Article itself and which time and again has been upheld by the Hon'ble Supreme Court as an indispensable right whether in the PUCL vs. Union of India & others or the NGO, Centre for Public Interest Litigation case. To ensure food security is the most important parameter of a nation's prosperity and therefore remains the matter of utmost concern for the State and again it is something which includes all the citizens irrespective of them being tribal or non-tribal.

Before the third dimension is pursued it is pertinent to mention the benefactor legislation The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 which recognizes the rights of the forest dwelling tribes and other traditional dwellers who reside in the forests since generations and give an impetus to their claim over sustainable use and conservation of biodiversity maintaining the ecological balance. The Act aims at ensuring the livelihood and food security of the forest dwellers and their claim over their ancestral lands.²¹ Though the Act is a benevolent legislation and assures of protecting the rights of the tribal but another aspect which comes to the fore is of providing protection to the forest dweller at par with more of the modern legislations which provide for incentivizing creation and possession of knowledge. As a matter of fact these can also be achieved through the coveted laws relating to protection of Intellectual Protection Rights.

Therefore, the third dimension is for providing protection to the indigenous wisdom which includes the traditional knowledge encompassing everything from the timing of sunrise to the arrival of rains, agricultural techniques, sowing and reaping time, thousands of varieties of grains, fruits, varieties of plants of the

²¹The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006

An Act to recognize and vest the forest rights and occupation in forest land in forest dwelling Scheduled Tribes and other traditional forest dwellers who have been residing in such forests for generations but whose rights could not be recorded; to provide for a framework for recording the forest rights so vested and the nature of evidence required for such recognition and vesting in respect of forest land.

WHEREAS the recognised rights of the forest dwelling Scheduled Tribes and other traditional forest dwellers include the responsibilities and authority for sustainable use, conservation of biodiversity and maintenance of ecological balance and thereby strengthening the conservation regime of the forests while ensuring livelihood and food security of the forest dwellings Scheduled Tribes and other traditional forest dwellers;

AND WHEREAS the forest rights on ancestral lands and their habitat were not adequately recognised in the consolidation of State forests during the colonial period as well as in independent India resulting in historical injustice to the forest dwelling Scheduled Tribes and other traditional forest dwellers who are integral to the very survival and sustainability of the forest ecosystem;

AND WHEREAS it has become necessary to address the long standing insecurity of tenurial and access rights of forest dwelling Scheduled Tribes and other traditional forest dwellers including those who were forced to relocate their dwelling due to State development interventions

same species, medicinal properties of plants, healing quality of numerous herbs and what not. The empowerment of tribal is most significantly based on this third dimension which again involves two aspects namely providing protection to the indigenous wisdom and safeguarding the traditional treasure of biodiversity which the tribal possesses. The rapid deforestation in the wake of modernization and to feed the never ending urbanization is not only endangering the existence of the human folk and the natural habitat of fauna and flora but also diminishing the genome treasure and eventually when the land is gone from the hands of the tribal, not only the genome treasure will be lost but the whole existence of the tribal will be lost along with the centuries old traditional wisdom. The protection available under the laws relating to protection of plant varieties and more emphatically the Indian sui generis legislation which recognizes the farmers as rightful owner of the plant varieties they possess. The farmers' here surely includes the tribal farmers and they are the rightful owners of the varieties they have conserved since time immemorial. Once these rights are upheld and protection of exclusivity is granted to the possessor; the farmer or the tribal in this instance will surely be empowering the tribal both economically and socially and much obviously protecting the plant genetic resources or the genome treasure. The Indian legislation not only recognizes the farmers as the conservator of plant genetic resources but also provides equal footing with a commercial breeder for their innovations which the farmer or the tribal create in the farms. Therefore, the protection under Protection of Plant Varieties and Farmers Rights Act, 2001 available to a tribal is not only for being the possessor of the extant varieties but also for innovations in existing and new varieties. Another aspect of recognition of their efforts is their being the source of plant genetic resources for all the developments whether improvisational or a new variety.

In this research paper an attempt is made to critically appreciate the statutory provisions related to the protection of plant varieties and more specifically the extant varieties as they are the possessions of the tribal and also with a contemplation for the statutory provisions as an indispensable and vital mechanism to protect the biodiversity, a device to ensure the existence and protection of various plant genomes, a contrivance to ensure the existence of age old traditional knowledge and moreover as an honest effort to empower the tribal populace. Further, an attempt is also made to find out that whether the existing legal regimes providing such protections are adequate enough to bring in the desired results? And what efforts and measures may be employed to attain the desired results if the contemporary regimes fall short of fulfilling the legislative intent.

Protection of plant varieties at a glance

A careful scrutiny of the definition of 'plant variety' provides that a variety must be recognizable by its characteristics, distinguishable from any other variety and remains unchanged through the process of propagation. If a plant variety grouping does not meet these criteria, it is not considered to be a variety within the UPOV system. Development of a new plant cultivar or variety, either by the traditional breeding methods or by modern molecular modification, requires a lot of time and effort. To recuperate the expenses of research and development, the breeder may seek to obtain exclusive commercial rights for such developed

variety. The scheme of compensation may be by grant of plant patent, utility patent or a plant variety protection. Another way may be by keeping it as a 'trade secret'. The method chosen depends on the precise benefits and limitations of the protection and the costs involved. One of the best choices may be through plant variety protection laws.

Plant variety protection relates to the conservation, use and commercial exploitation of plant varieties by farmers, commercial breeders, governments and relevant international organisations. Plant variety protection is one subset of this broad field which focuses exclusively on knowledge which can be commercially exploited. In other words, plant variety protection relates to intellectual property rights over plant varieties which guarantee rights holder's exclusive commercial rights for a specific period of time. The usual rationale for introducing exclusive intellectual property rights in explicit fields of technology is that an individual or legal entity that devotes significant resources to the development of new technologies should be rewarded with a temporary exclusivity. This is linked to the idea that certain forms of knowledge can easily be copied. In such cases, individuals who have not contributed to the development of an invention would be in a position to benefit from the fruits of the invention if no exclusive right was offered to the inventor.

In the agricultural field, inventiveness was conventionally based on the sharing of biological resources and related knowledge among farmers in most parts of the world. This changed slowly in the early part of the 20th century in certain Organisation for Economic Co-operation and Development (OECD) countries where a private sector seed industry slowly developed. The development of the private sector in this field led to calls for a form of intellectual property rights protection over plant varieties to give sufficient incentive to private sector actors to enter the seed business. However, while in most fields of technology, the preferred mode of legal protection for inventions was patents, in the agricultural field, an alternative form of intellectual property rights, plant breeders' rights (PBRs) was developed. Several factors led to the development of this alternative form of intellectual property protection. On the one hand, it was progressively recognized that a form of intellectual property rights was essential to foster private investment in the seed sector. On the other hand, there were two forms of confrontation to the extension of patent rights in this field. For a while, the industry argued that the notion of inventiveness which characterized patents would be diluted if plant varieties were brought onboard because a new plant variety was seen more as an improvement on an existing product of nature than as a 'scientific' invention²². Other actors argued, and in some cases still argue, that seeds had always been part of the common heritage of humankind and were freely exchanged among farmers and farming communities²³. The diverse positions articulated with regard to the introduction of plant breeders' rights have assumed added significance in the wake of the adoption of the TRIPS Agreement.

²²Dwijen Rangnekar, 'INTELLECTUAL PROPERTY RIGHTS AND AGRICULTURE: AN ANALYSIS OF THE ECONOMIC IMPACT OF PLANT BREEDERS' RIGHTS', UK, 2000

²³ Vandana Shiva, *'Farmers' Rights and the Convention on Biological Diversity'*, in Vicente Sanchez & Calestous Juma edition, *BIO DIPLOMACY - GENETIC RESOURCES AND INTERNATIONAL RELATIONS*, 107, Nairobi: African Centre for Technology Studies, 1994

Indeed, while a number of OECD countries had progressively adopted a form of PBRs before 1994 to foster the development of their private seed industries, most developing countries had not introduced any form of intellectual property right protection in the agricultural sector.

At a general level, PBRs have been correlated to the progressive commercialisation of the agricultural sector and have essentially been the preserve of developed countries which increasingly felt they needed to give additional incentives for the development of a private sector seed industry. In other words, it became progressively acknowledged that breeders should be given specific legal rights to the varieties they develop in a bid to foster the development of new varieties that could easily be reproduced by farmers or competing breeders. As a result, PBRs as they exist today have been developed for the specific contexts and needs of developed countries. The legal regime for PBRs is quite consistent thanks to the fact that most countries having introduced PBRs have either joined the International Union for the Protection of New Varieties of Plants (UPOV) regime or modelled their legislation after the UPOV regime. India opted for a *sui generis* system and enacted the Protection of Plant Varieties and Farmers' Act, 2001 to recognize the efforts of the Breeders, Researchers and the Farmers in the creation of new varieties and to provide protection to such endeavours²⁴. The Indian legislation is a benevolent legislation which aims at recognizing the efforts of the traditional farmers, the domestic farming community and its rural economy by incentivising their efforts by providing legal protections.

The recognition of tribal farmers' rights

The tribal or the indigenous farmers have ever been engaged in innovations in their fields since settled agriculture began. This quest for innovations led to many new discoveries related to agriculture and many a new methods were developed. The indigenous farmer through continuous efforts was able to find best methods and select the best variety of crops. He preserved these varieties through centuries of untiring efforts and also passed on this traditional knowledge through generations which included the beneficial aspects of various plants and their varieties. It is the traditional farmers who make available plant genetic resources for the development of new plant varieties

The traditional knowledge includes everything from selection of seeds, the right time of sowing, techniques of nourishment, time of harvest and even the rotation of crops which in turn revitalised the land. The traditional farmer was continuously experimenting in the farms and thus developing hundreds of varieties of different crops. The best example is of rice, the most basic

²⁴The General Agreement on Tariffs and Trade (GATT) Round, 1986 traditionally known as the Uruguay Round brought in new elements into the trade discussion, especially relating to agriculture, describing the granting of Intellectual Property Rights on biological materials enumerated in the Trade Related Intellectual Property Rights (TRIPS) chapter. TRIPS explicitly require member nations to grant patents on micro-organisms, non-biological and microbiological processes as well as effective IPR protection for plant varieties. TRIPS provide a choice for protecting plant varieties, i.e. members to provide for protection of plant varieties either by a patent or by an effective *sui generis* system or by any combination thereof.

requirement as food to the millions is available in hundreds of varieties, from the very ordinary to the highest quality of fine and aromatic variety. Similarly the numerous varieties available in horticulture speak of the stupendous achievements of the traditional farmers. The farmers are not only the innovators but also they have been the conservators of the plant varieties and bio-diversity.

The global initiatives at preserving and conserving bio-diversity and the role of indigenous people in these conservation activities brought forth the recognition of the efforts of the farmers. The farmer's purposive selection is a form of innovation which is implemented through informal experiments. The farmers adopt a certain criterion in their innovation process, to identify the improved varieties they develop. It has a certain resemblance to what the formal plant breeders follow. The breeders follow the three-fold criteria of distinctiveness, uniformity and stability (DUS) of the plant varieties they develop to lay claim to PBRs. But similar farmer innovation receives no recognition or reward. The recognition that formal plant breeders receive is facilitated by the extensive codification of their knowledge. The lack of such codification acts as detriment to the recognition of the indigenous farmers' contributions.²⁵

One hindrance to codification of farmers' knowledge is the nature of the farmer innovation process. Unlike the formal breeder, who conducts his research under controlled conditions, the farmer uses the available environment to carry out his experiments. The farmers use the environmental condition based on their experiences. Natural selection takes place by the action of the environmental stress on inherent variation caused by gene recombination and mutation. This phenomenon is present not only in the plants but also in other organisms which affect the agricultural production which includes micro-organisms, weeds and pests. The reliance of farmers on natural selection has resulted into a constant evolution of changes in agriculture.

The development of the Global System on Plant Genetic Resources began in 1983 with the establishment of the Commission on Plant Genetic Resources.²⁶ The objectives of the Global System are to ensure the safe conservation, and promote the availability and sustainable use of plant genetic resources by providing a flexible framework for sharing the benefits and burdens. The CGRFA, with its Intergovernmental Technical Working Group on Plant Genetic Resources for Food and Agriculture, monitors and coordinates the development of the Global System. After long debate since 1979 three FAO conference resolutions were passed in 1989 and 1991 (4/89, 5/89 and 3/91). These were negotiated by the Commission for Plant Genetic Resource (PGR) and unanimously adopted by over 160 countries.²⁷ The commission defines Farmer's Rights as 'rights arising from the past, present, future contributions of the farmers in conserving, improving, and making available plant genetic resources, particularly those in centres of origin/diversity.'

²⁵Biswajit Dhar, '*Sui Generis System for Plant Variety Protection, Options under TRIPS*' A Discussion Paper, Quaker United Nations Office, April 2002

²⁶ Now it is The Commission on Genetic Resources for Food and Agriculture - CGRFA

²⁷GangulyPrabuddha, INTELLECTUAL PROPERTY RIGHTS: UNLEASHING THE KNOWLEDGE ECONOMY, Tata McGraw-Hill Publishing Company Ltd., New Delhi, 2001.

The CGRFA has concentrated on the implementation of the International Undertaking on Plant Genetic Resources for Food and Agriculture (1983), the development of the Global Plan of Action (1996), and negotiations for an International Treaty on Plant Genetic Resources for Food and Agriculture (2001). Genetic diversity is crucial to the breeding of food crops and thus one of the central preconditions of food security. Access to diverse genetic resources is vital to modern plant breeding as it provides the genetic traits required to deal with crop pests and diseases, as well as with changing climate conditions. Throughout history there have been many examples of the crucial importance of genetic resources for food security and human survival.²⁸

The GATT deliberately had kept agriculture and allied products out of its purview but the Uruguay Round brought in new elements into the trade discussion, especially relating to agriculture and allied products. A system for granting property protection to crop varieties was initiated by European plant breeders in the form of '*Union Internationale Pour La Protection Des Obtentions Vegetales*' (UPOV) under the auspices of the World Intellectual Property Organization (WIPO). UPOV is an intergovernmental organization with headquarters in Geneva. UPOV was established by the International Convention for the Protection of New Varieties of Plants. The union signed a convention in Paris in 1961 which gave exclusive property rights on developed varieties to the respective breeders of the member states. This was in acknowledgment of the breeder's efforts and achievement, and it also provided means by which the breeder could share the profit made from sale of seeds of the protected variety. The plant breeders right as defined by UPOV is an exclusive right over the commercial production and marketing of the reproductive or vegetative propagating material of the protected variety.²⁹ The 1961 convention came into force in 1968 and was subsequently revised in 1972, 1978 and 1991, revised in 1998.

The 1978 Act entitled the breeder for protection even if the variety for which protection is sought is a naturally occurring plant. But under the 1991 Act, the discovery of a naturally occurring plant is not sufficient. The breeder must have somehow developed the variety in order to secure protection. Article 5(3) of the 1978 Act allowed other breeders to use a protected variety for creating new varieties without authorization. The requirements to be fulfilled in order to obtain protection were significantly made more stringent and the scope of the breeder's rights was extended under the 1991 UPOV Act. To be eligible for protection, the varieties have to be; distinct from existing commonly known varieties, sufficiently uniform, stable and new in the sense that they must not have been commercialized prior to certain dates established by reference to the date of the application for protection. The extended scope of the rights includes requiring authorization for any multiplication for production.

The "farmer's right" to store and plant seed was replaced by a "farmer's privilege" requiring authorization of the breeder. The exception for experimentation and

²⁸Cary Fowler and Pat Mooney, 'SHATTERING: FOOD, POLITICS, AND THE LOSS OF GENETIC DIVERSITY', 42-53 Tucson: University of Arizona Press, 1990

²⁹ Tripathi, Surya Mani, '*Intellectual Property Rights in Agricultural Research System*' Available at <<http://ssrn.com/abstract=1103168>> (last visited on February 20, 2017)

creation of other varieties was narrowed to eliminate use to create a variety which is an essential derivation of the protected variety.³⁰ It was thought that modern biotechnology allows such close manipulation of genes that there was increasing likelihood for minor variations to be exploited as loopholes to protection of the variety, the so called “cosmetic breeding”.³¹

The accession of Bulgaria and the Russian Federation on March 24, 1998 triggered the entry into force of the 1991 Act on April 24, 1998. As of that date, there were thirty-seven members of the Union and seven signatories of the 1991 text.³² Since the commencement of UPOV till the 1978 Act was in force, only two exemptions were allowed, namely;

- I. Farmer's exemption: It permits the farmer to save seed from his harvest for next year's planting on his own field.
- II. Breeder's exemption: It allows a breeder to use the protected variety as a parent in his breeding programme.

These exemptions have been withdrawn in the 1991 revision of the UPOV Act and the provisions were made to a certain extent analogous to the provisions of patent regime. It is observed that the 1991 Act is quite similar to the provisions of the patent law in terms of protection provided to the plant varieties. Also it provides countries the option of choosing both patent and PBR systems of protection. Plant breeders' using the techniques of molecular biology such as terminator, verminator and traitor can claim protection under PBR and also obtain patent protection. It is clear that withdrawal of these exemptions will not only jeopardize the livelihood of small farmers but will also act as a major bottleneck to the access and benefit sharing envisaged in the provisions of the Plant Genetic Resources for Food and Agriculture (PGRFA) Treaty.

The breeder's rights are criticised of making farmers dependent on commercial seed producers for more efficient and pesticide/herbicide compatible hybrids and even the farmers now, no longer retain their old seed varieties. The practices of seed collection and distribution programs and immigrations had created diversity, which seems to be almost lost as a consequence. In pursuit of quality seeds of such varieties, the farmer has lost his self-reliance and even in some cases a germplasm itself, in process of making it adaptable to various environments, pests, diseases and culture. Such variety may never be seen again or used by any farmer or breeder.

The relevance of small farmer though is fading fast and the world is moving towards the concept of food production by agribusiness.³³ Therefore, in developed countries where utility patent protection is allowed for underlying genetic material, the relevance of sui generis protection for plants is questionable. Nevertheless, the American companies are supportive of US entering the 1991

³⁰ Article 15, UPOV Act 1991

³¹ Graeme B. Dinwoodie, William O. Hennessey, SHIRA PERLMUTTER, INTERNATIONAL INTELLECTUAL PROPERTY LAW AND POLICY, LexisNexis, 2001

³² Bulgaria, Denmark, Germany, Israel, Netherlands, Russian Federation and Sweden

³³ Available at <<http://www.upov.int/eng/newplant/needvar.htm>> (last visited on February 25, 2017)

Act, since it achieves the purposes of national treatment in those countries which chooses the option of sui generis system since the TRIPS Agreement, under Article 27(3) (b) compels the WTO members to provide for protection of plant varieties either by a patent or by an effective sui generis system or by any combination thereof.

In US, protection of asexually produced plants is taken care of by the Plant Patent Act where as the PVPA protects such agriculturally important crops as cereal grains, grasses, and vegetables that are grown from seed.³⁴ The PVPA is a certification program run by the Plant Variety Protection Office (PVPO) of the US Department of Agriculture (USDA). The PVPO issues Certificates of Protection for new varieties of plants that are seed reproduced or tuber propagated, upon examination to determine that a plant is a new, distinct variety, and genetically uniform and stable. A Certificate of Protection remains in effect for eighteen years from the date of issuance. The owner may specify that the variety be sold by variety name only as a class of certified seed, as defined in the Federal Seed Act. Once so specified, the designation cannot be reversed. There are two exemptions to the rights granted. One exists to allow farmers to save seed for use on their own farm or to sell it to their neighbours. Recent court decisions have defined who is a 'farmer' and how much seed can be saved. Another exemption allows research to be conducted using the variety. This allows for the free exchange of germplasm within the research community.³⁵

The protection of plant varieties and farmers' rights act, 2001

The PPV&FR Act aims to establish "an effective system for the protection of plant varieties, the rights of farmers and plant breeders, to encourage the development of new varieties of plants", in line with Article 27.3 (b) of TRIPS. The prime objectives of the Act prominently include protection of the rights of farmers for their contribution made at any time in conserving, improving and making available plant genetic resources for the development of new plant varieties and to ensure availability of high quality seeds and planting materials of improved varieties to farmers. The Protection of Plant Varieties and Farmers' Rights Act, 2001 defines certain terms like *variety*,³⁶ *extant variety*,³⁷ *essentially derived*

³⁴ i.e. via sexual reproduction

³⁵ Janice M. Strachan, 'PLANT VARIETY PROTECTION: AN ALTERNATIVE TO PATENTS', Probe, Volume 2(2): 1992

³⁶Section 2(za), A plant grouping except microorganisms within a single botanical taxon of the lowest known rank, which can be

- defined by the expression of the characteristics resulting from a given genotype of a plant of that plant grouping
- distinguished from any other plant grouping by expression of at least one of the said characteristics
- considered as a unit with regard to its suitability for being propagated, which remains unchanged after such propagation and includes propagating material of such variety, extant variety, transgenic variety, farmers' variety and essentially derived variety

³⁷Section 2(j), A variety available in India which is

- notified under section 5 of Seeds Act, 1966
- farmers' variety

variety,³⁸ *farmer*,³⁹ *farmers' variety*,⁴⁰ *breeder*,⁴¹ *benefit sharing*⁴² and *gene fund*⁴³ which are essential for clear understanding about the fine balance between the Farmers' Rights enshrined in the Act.

The Act envisages that the Central Government shall establish an Authority which will be designated as the Protection of Plant Varieties and Farmers' Rights Authority. It shall consist of a chairperson and fifteen members as representatives of different concerned ministries and departments, seed industry, farmers' organizations, tribal communities and State-level women's organization, etc.⁴⁴ The Authority shall encourage the development of new varieties of plants and protect the rights of the farmers and breeders. The functions of the Authority include:

- The registration of extant new plant varieties,
- Developing characterization, indexing and cataloguing farmers' varieties,
- Compulsory cataloguing facilities for all varieties of plants,
- Ensuring that seeds of the varieties registered are available to the farmers and providing free compulsory licensing of such varieties,
- Collecting statistics with regard to the plant variety including contribution of any person,
- Ensuring the maintenance of the register.

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- a variety about which there is common knowledge
 - any other variety which is in public domain

³⁸Section 2(i), A variety shall be said to be essentially derived when it

- is predominantly derived from such initial variety from a variety that itself is predominantly derived from such initial variety, while retaining the expression of the essential characteristics that result from the genotype or combination of genotypes of such initial variety
- is clearly distinguishable from such initial variety
- conforms (excepting for the differences which result from the act of derivation) to such initial variety in the expression of the essential characteristics that result from the genotype or combination of genotypes of such initial variety

³⁹Section 2(k), Any person who

- cultivates crops by cultivating the land himself
- cultivates crops by directly supervising the cultivation of land through any other person
- 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

⁴⁰Section 2(l), A variety which

- has been traditionally cultivated and evolved by the farmers in their fields
- is a wild relative or land race of a variety about which the farmers possess common knowledge

⁴¹Section 2(c), A person or group of persons or a farmer or group of farmers or any institution which has bred, evolved or developed any variety

⁴²Section 2(b), In relation to a variety, means such proportion of the benefit accruing to a breeder of such variety or such proportion of the benefit accruing to the breeder from an agent or a licensee of such variety, as the case may be, for which a claimant shall be entitled as determined by the Authority under Section 26

⁴³Section 2(m), the National Gene Fund constituted under Section- 45(1)

⁴⁴ Section-3(1), Protection of Plant Varieties and Farmers' Rights Act, 2001

The PPV&FR Act stipulate for the registration of new varieties that conform to the criteria of novelty, distinctiveness, uniformity and stability (NDUS),⁴⁵ the right of farmer to register their own varieties; right to save, use, sow, resow, exchange, share or sell farm produce including seeds; disclosure requirement and benefit sharing; protection of extant varieties; grounds for challenging the registration and issuance of compulsory licenses (CL). Many of these novel features of the Indian sui generis regime go beyond the UPOV conventions.

Parties qualified to get registration in compliance with Section 16 are Breeders, Farmers or Group of Farmers or Community of Farmers or Assignees and Universities or Public Funded Agricultural Research Institutions. The legal entity status allowed to these Public Research Institutions under Section 16(f) for the purpose of variety registration is not available to Private Research Institutions. The national agricultural research system, mainly the Indian Council of Agricultural Research (ICAR) and the State Agricultural Universities (SAUs) have contributed significant material support as well as techno-scientific backstopping for building the requisite institutional mechanism to administer the new PVP law in the country.⁴⁶

Protection of farmers' rights under the ppv&fr act, 2001

The most significant uniqueness of the PPV&FR Act is that it enshrines farmers' rights as positive rights that go further than the usual characterization of farmers' rights in the international treaties. Although international instruments such as the Food and Agriculture Organization (FAO) resolution 5/89⁴⁷ and the International Treaty on PGR recognize the concerns associated to the commercial exploitation of the germplasm by the plant breeders where no benefit accrues to farmers as donors of the germplasm⁴⁸ and they define farmers' rights narrowly. These legal instruments define farmers' rights as rights arising from the past, present and future contribution of farmers in conserving, improving and making available PGR, particularly those in centers of origin/diversity.⁴⁹ This portrayal of the farmers' right does not grant any positive rights to farmers over their intellectual assets, although Article 9.3 of the International Treaty recognizes the right of the farmer to save, use, exchange and sell farm-saved seeds subject to national laws of the country. It is important to note that the International Treaty allows member states to develop their own forms of protecting farmers' rights.⁵⁰ The concept of farmers' rights can be understood in three ways: first, the narrow right arising from their past contributions and some basic rights such as rights to

⁴⁵ Section 15(1) of the PPV&FR Act, 2001

⁴⁶ Sudhir Kochhar, 'How effective is Sui Generis Plant Variety Protection in India: Some Initial Feedback', Journal of Intellectual Property Rights, pp-273-284, Vol. 15, July 2010

⁴⁷ Resolution 5/89, Adopted at the 25th Session of the FAO Conference-Rome 1989, available at <<http://ftp.fao.org/ag/cgrfa/Res/C5-89E.pdf>> (last visited on February 21, 2017)

⁴⁸ Correa, C., TRADE RELATED ASPECTS OF INTELLECTUAL PROPERTY RIGHTS: A COMMENTARY ON THE TRIPS AGREEMENT 294, Oxford University Press, Oxford, 2007

⁴⁹ Mission Statement of UPOV, available at <<http://www.upov.int/en/about/mission.html>> (last visited on February 26, 2017)

⁵⁰ *Ibid*, Article 9.2

save, use, exchange or sell farm-saved⁵¹,⁵² seeds second, the right to be remunerated for providing the PGR used by the commercial breeder in developing new varieties also termed as benefit sharing⁵³ and, third, the positive right to protect and register their developed varieties and enjoy all the rights that accrue from such registration like a commercial plant breeder⁵⁴.⁵⁵

The PPV&FR Act recognizes the right to benefit sharing and also the positive right of ownership of a farmer over the PGR and allows farmers to develop and register their own varieties that fulfill the criteria of NDUS or even the Distinctiveness, Uniformity and Stability (DUS) criteria for registration as an extant variety.⁵⁶ The definition of “breeder” in the PPV&FR Act expressly includes farmers.⁵⁷ Further, the Act defines farmer’s variety as a variety that has been traditionally cultivated and evolved by the farmers in their fields or is a wild relative or land race of a variety about which the farmers possess the common knowledge.⁵⁸ Apart from registration as a farmer’s variety, the PPV&FR Act also allows farmers to register their varieties under the category of extant varieties,⁵⁹ which is another novel feature of the PPV&FR Act that allows registration of already existing varieties.

Extant variety means a variety available in India that is the farmer’s variety or a variety notified under section 5 of the Seeds Act 1966 or a variety about which there is common knowledge or any other variety in the public domain.⁶⁰ Therefore, farmer’s variety can be registered separately and also under the category of extant varieties. Though the criterion for registration of extant varieties is not clearly articulated in the PPV&FR Act, Section 15(2) provides that an extant variety shall be registered if it conforms to distinctiveness, uniformity and stability as specified under the regulations laid down by the Protection of Plant Variety and Farmer’s Rights Authority of India. The novelty criterion is not mentioned for registering extant varieties. These regulations have been laid down in the Gazette notification issued by the Indian government on 7 December 2006.⁶¹ According to this Gazette notification, the plant authority has constituted an Extant Variety Registration Committee, which has been entrusted with the job of making recommendations for the registration of the extant variety of notified

⁵¹ Id, Article 9.3

⁵² Correa, *Supra* note 49

⁵³ Mission Statement of UPOV, available at <<http://www.upov.int/en/about/mission.html>> (last visited on February 10, 2016), Article 10.2 and Article 8(j) of the Convention on Biological Diversity, 1992 provides for benefit sharing

⁵⁴ Correa, *Supra* note 49

⁵⁵ This positive right is also argued as an intellectual property right

⁵⁶ See The PPV&FR Act, 2001, Section 15(1), Sections 39.1(i), 14 and 15(1)

⁵⁷ *Ibid* Section 2(c)

⁵⁸ Id, Section 2(l)

⁵⁹ Id, Section 8(2)(a)

⁶⁰ Id, Section 2(j)

⁶¹ Gazette of India, notification dated December 7th 2006, Ministry of Agriculture, Government of India. Available at <<http://plantaauthority.gov.in/PDFFile/Indgazette.pdf>> (last visited on February 25, 2017)

variety under the Seeds Act 1966.⁶² This Gazette notification also states that the DUS criteria for registration of extant varieties will differ from species to species and they shall be notified by the plant authority in the Gazette of India.⁶³ Since the registration of the extant variety does not require the fulfillment of the novelty criteria, the registration of such varieties is dissimilar from those for the newly developed varieties.

Although the above-mentioned legal framework allows for the registration of farmer's variety through two possible options, some commentators have argued that the NDUS or DUS criterions (in case of the extant variety) used for commercial breeders may not be appropriate for the farmer's variety because these criteria are more suited for modern scientific methods of breeding and laboratory-based research, which the majority of subsistence farmers, in a developing country like India, do not undertake.⁶⁴ In fact, it has been argued that the criteria for registration in the PPV&FR Act have been taken from UPOV, which was designed by developed countries for the protection of plant varieties developed by commercial breeders who have the capability to undertake modern and scientific-based research.⁶⁵ In other words, the registration criterion, for registering farmer's varieties, in the PPV&FR Act has not been tailored to suit the practical situation that surrounds most of the farmers in India.

Hence, although all relevant actors, i.e. commercial breeders, public research institutions and farmers, can register their varieties, in reality, only commercial plant breeders and public research institutions will be able to register their varieties because they have the capacity to undertake modern scientific breeding to fulfill the NDUS criteria or DUS criteria in case of registration of an extant variety. Farmers in India, unlike the commercial plant breeders, follow traditional and not modern breeding processes or laboratory-based research. Hence, varieties developed by farmers may not be able to fulfill the NDUS criteria or DUS criteria in case farmers wish to register their varieties as extant varieties. As a result, very few farmers' varieties will benefit from the registration system provided in the PPV&FR Act.⁶⁶ Moreover, since registration of a new variety is the only way to get protection under the PPV&FR Act for farmers, many varieties developed by farmers will not enjoy any protection.⁶⁷

The PPV&FR Act recognizes the rights of the farmers to save, use, sow, re-sow, exchange, share or sell their farm produce including seeds of a protected variety

⁶²See Section 6, Chapter III, The Gazette of India, notification dated December 7th 2006, Ministry Agriculture Government of India. Available at <<http://plantaauthority.gov.in/PDFFile/Indgazette.pdf>> (last visited on February 11, 2017)

⁶³*Ibid*

⁶⁴ Gopalakrishnan, N. S. "An Effective Sui Generis Law to Protect Plant Varieties and Farmer's Rights in India: A Critique", 165, Volume 4(1), Journal of World Intellectual Property, 2001

⁶⁵ Correa, *Supra* note 49

⁶⁶ Correa, *Supra* note 49

⁶⁷Sahai Suman "Protection of new plant varieties: A developing country alternative" 579-80, Volume 34, Economic and Political Weekly, 1999

in the same manner as he or she was entitled before.⁶⁸⁶⁹ Although the previous draft of the plant variety legislation recognized the rights of the farmers over their crops, it did not recognize the rights of farmers over the seeds of the crops they grew. This led to huge protests and as a result of a strong campaign launched by the civil society the legislation finally recognized the right of the farmer to sell seed in the same manner as before. The importance of the farmer to sell seed is fundamental in a country like India, where the farming community provides more than 80% of the country's annual requirements of seed.⁷⁰ A farmer not having the right to sell seed implies that each time the farmer wishes to grow a new crop, he or she has to turn to the market to procure seeds. Such reliance on the market for seeds is not economically feasible for many poor farmers in India and hence will have livelihood repercussions.

Further, if farmers do not have the right to sell seeds, it will weaken the overall seed market in India because there will be less competition for the private seed companies. Moreover, as pointed out earlier, control over seeds by the farmers is a crucial element in ensuring food security. It is important to point out that it has been argued that even the right of the farmer to sell seeds or control over seeds does not guarantee self-reliance in seeds for the farmers, especially in cases where the harvested material cannot be used as seed because some processing is required to convert the harvested material into seed.⁷¹ Hence, farmers will have to turn to the market in such cases. Notwithstanding this argument, the significance of farmers having control over seeds cannot be ruled out, especially in those circumstances where the harvested material can be used as a seed, without any kind of processing.

One of the most significant features of the PPV&FR Act is the provision of disclosure requirement, which makes it obligatory for the breeder to disclose the information concerning the use of any genetic material conserved by any tribal or rural families that the breeder may be using in developing the new variety.⁷² Failure to disclose such information will result in the rejection of the registration application.⁷³ A disclosure requirement prohibits misappropriation of the genetic resources, especially of the varieties that have been developed by the farming community. The Act also provides benefit-sharing provisions, whereby the commercial breeder has to share the benefits that will accrue upon the registration of the variety with the farmers or the traditional rural communities who have contributed towards developing the variety.⁷⁴ The benefit-sharing provisions ensure that the contributions and efforts of the farming community in the newly developed varieties do not go unrewarded.

⁶⁸ Lalitha, N. "*Intellectual Property Protection for Plant Varieties: Issues in Focus*", 1922-1927, Volume 39(19), Economic and Political Weekly, 2004

⁶⁹ Section 39(1) (iv), PPV&FR Act,

⁷⁰ Rao, C.N, "*Indian Seed System and Plant Variety Protection*", 845-52, Volume 39(8), Economic and Political Weekly, 2004

⁷¹ Correa, *Supra* note 49

⁷² Section 40 (1), PPV&FR Act, 2001

⁷³ *Ibid*, Section 40 (2)

⁷⁴ Id, Sections 24(2) and 26

However, the actual implementation of the benefit-sharing provisions may face practical difficulties.⁷⁵ These practical difficulties may arise because the provisions of the PPV&FR Act that talk of inviting claims for benefit sharing after granting a certificate of registration⁷⁶ presuppose that the local community will be vigilant to apply for benefit sharing.⁷⁷ It appears to be slightly complicated in a country like India due to the social, economic and educational conditions of the local traditional communities and farmers as these communities are often ignorant of such provisions.

Consequently, there is a possibility that the actual realization of the benefit sharing provisions will face practical difficulties. To remove these practical difficulties, it becomes obligatory for the state to make the traditional societies aware of their rights. Improved consciousness will result in better implementation of the benefit-sharing provisions of the PPV&FR Act and obviously it will serve for the benefit of tribal livelihood and simultaneously will ensure protection of plant genome, protect biodiversity, restrict bio-piracy, and surely will be guaranteeing sustainable development.

Conclusions

The role of indigenous farmers in ensuring food security deserves to be recognized and any legislation restricting their access to plant genetic resources would jeopardise the national food security. This modern legislation, The Protection of Plant Varieties and Farmer's Rights Act, 2001 has many novel features like positive farmers' rights; disclosure requirement; benefit sharing and prior informed consent; and the prospect of issuance of compulsory licence in public interest which in fact goes far beyond the international commitments detailed in various versions of UPOV conventions. As far as the rights of farmers' as enshrined in the legislation are concerned it seems that it is too cumbersome a process to really be accessible by a farmer. Imagine a small farmer living in the remote tribal areas of Chhattisgarh possess a plant variety which has medicinal values and then a multinational pharmaceutical company seeks protection rights over the said variety, does the vulnerable farmer stand any chance of justice, recognizing his heritage of traditional knowledge. The tribal farmers have filed registration applications for approximately 5000 varieties under the Act⁷⁸ and the

⁷⁵ Gopalakrishnan, *Supra* note 65

⁷⁶ Section 26 (1), PPV&FR Act, 2001

⁷⁷ Gopalakrishnan, *Supra* note 65

⁷⁸ New Delhi, June 7, 2017 (PTI) Tribal farmers have submitted over 5,000 plant varieties for registration with a regulator PPVFRA in the last three years to help develop climate resilient and sustainable seeds varieties in future, Agriculture Minister Radha Mohan Singh said today.

Plant varieties are registered with PPVFRA (Protection of Plant Variety and Farmers Rights Authority), enabling farmers with exclusive right to produce, sell, market, distribute, import and export the variety.

As many as 125 Krishi Vigyan Kendras (KVKs), farm science centres, out of total 673 are working in tribal areas. It is through KVKs that the tribal farmers have submitted their more than 5,000 plant varieties for registration with PPVFRA, Singh said at a national workshop here.

fact that there have been 1067 Extant Varieties, 625 Farmers' Varieties, 256 New Varieties and 01 Essentially Derived Variety registered in India⁷⁹ with the authorities establish that we are moving in the right direction and the allegations of falling short of protecting the interests of indigenous farmers are indisputably negated and whatever the qualms remain are only hiccups which usually appear in performance of a legislation which is more of a beneficiary nature than regulatory and is still in a nascent and developing stage. The Act definitely is a device for empowering the tribal livelihood ensuring the cherished sustainable development. The observations that still there are some areas in which require attention and procedural amendments to remove the impediments in providing adequate protection and incentives to the indigenous farmers may be overcome by some of the suggestions which may be enumerated as follows:

1. The tribal farmers' rights should not be conceived strictly along the lines of existing intellectual property rights such as patents and Breeders' rights. The commercialisation of food crops may be of importance to all the concerned in agriculture, but it is not the only relevant aspect, the issues pertaining to conservation and sustainable use of agro-biodiversity and food security remains of utmost importance as it is concerned with the hunger of millions. The notion of these rights achieves a number of momentous purposes both from a socio-economic and socio-ecological perspective.
2. The legislation provides for payment for the use of farmer varieties used to breed new varieties and this revenue will flow into the National Gene Fund. In spite of its welfare intentions of protecting interest of farming community, it is likely to face hassles in implementation, since the language is too ambiguous. The Gene Fund should be made the recipient of all revenues payable to the farming community under various heads and the communities should collectively, rather than in individual capacity have access to this money, except in apparent cases where a farmer's variety is explicitly identified and has been used. The tribal farmers should be empowered to decide about the expenditure of this income and this money should not be confined only for conservation or for managing ex situ collections.
3. The process of calculating and realising benefit sharing should be made simpler and easier to execute. An option may be of fixing benefit sharing in a lump-sum amount depending, for instance on anticipated volume of seed sale.
4. The liability clause enshrined in the Farmers Rights is to protect the farmer against spurious and /or poor quality seed resulting in crop failures. The

PPVFRA under the aegis of Agriculture Ministry provides an effective system for protection of plant varieties, the rights of farmers and plant breeders, and to encourage the development and cultivation of new varieties of plants.

In a statement, Singh said about Rs 75-100 crore is being provided to KVKs in tribal areas for the extension of Agriprogrammes and new technologies.

He said that natural farming in tribal areas should be promoted and even new technological innovations in agriculture must reach to their fields. Available at: <<http://indiatoday.intoday.in/story/tribal-farmers-apply-for-registration-of-5k-plant-varieties/1/973156.html>> (last visited on 29th September, 2017)

⁷⁹ Available at: <plantaauthority.gov.in/List_of_Certificates.htm> (last visited on February 22, 2016)

fixation of compensation is left to the discretion of the Plant Variety Authority and this may lead to arbitrary decisions and hence this should be amended.

5. In case of superfluous claims made by the breeder resulting in failure of crop, the compensation award should be at least double the amount of projected harvest value and a jail term may be added provided the breeder repeats such an offence. This will definitely act as a deterrent.
6. The rights of local communities ought to be protected as being genuine owners of the bio resources of their regions, since they have maintained and improved them in value over the years. It is the tribal communities who possess the knowledge of the properties, uses and merits of these resources.
7. This knowledge has accumulated not only through extensive and cherished experience but also through innovative experimentation which is definitely comparable in complexity with the methods of modern science. Indigenous communities are the owners of technology of these bio resources. It is imperative that an adequate account of these bio resources is made and that there is proper documentation of the properties and their uses.
8. This documentation will make possible, establishing the claims of compensation to individuals or communities for recompense of royalties for transfer of indigenous technologies. These information data bases will also ensure that community knowledge remains firmly in public domain. This documented knowledge should be submitted with government repositories and should be made legally admissible in court of law as evidence for prior knowledge.
9. A provision should be made to enable recognition of the oral tradition as documentation of use, since it is not possible, that all who possess knowledge and technology about bio resources are fully conversant with or capable of rendering their knowledge into prescribed system of documentation.
10. There should be periodic training programmes organized in the local languages for farmers and tribal people on various aspects of the legislation.

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