

# The Protection of Plant Varieties and Farmers' Rights Act of India

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*The Protection of Plant Varieties and Farmers' Rights Act was passed by the Indian Government in 2001. After India became signatory to the Trade Related Aspects of Intellectual Property Rights Agreement (TRIPs) in 1994, a legislation was required to be formulated. Article 27.3 (b) of this agreement requires the member countries to provide for protection of plant varieties either by a patent or by an effective sui generis system or by any combination thereof. Thus, the member countries had the choice to frame legislations that suit their own system and India exercised this option. The existing Indian Patent Act, 1970 excluded agriculture and horticultural methods of production from patentability. The sui generis system for protection of plant varieties was developed integrating the rights of breeders, farmers and village communities, and taking care of the concerns for equitable sharing of benefits. We attempt here to critically analyse the provisions of legislations for their effective implementation.*

PLANT GENETIC RESOURCES (PGRs) are the foundation for the development of a food and nutritionally secure society. In addition, plants have many uses, including feed, fibre, medicine and industrial applications. PGRs were treated as the 'heritage of mankind' and were shared freely among nations, till the concerns for conservation of biological diversity were raised by the Convention on Biological Diversity (CBD), which came into force in 1993. The conservation and sustainable utilization and access to biological diversity were considered as national sovereignty by CBD. Consequently, many issues regarding the rights of the conservers, users, breeders, farmers and intellectual property have emerged.

During 2001, significant developments have taken place with respect to the realization of the rights of breeders, farmers and local communities. The Protection of Plant Varieties and Farmers' Rights Act (PPVFR) was passed by the Indian Government. The present article is an attempt to critically analyse the provisions of the legislations for their effective implementation.

## The genesis of the Indian legislation

In India, agricultural research including the development of new plant varieties has largely been the concern of the government and public sector institutions. Earlier, India did not have any legislation to protect the plant varieties and, in fact, no immediate need was felt. However, after India became signatory to the Trade Related Aspects of

Intellectual Property Rights Agreement (TRIPs) in 1994, such a legislation was necessitated. Article 27.3 (b) of this agreement requires the member countries to provide for protection of plant varieties either by a patent or by an effective *sui generis* system or by any combination thereof. Thus, the member countries had the choice to frame legislations suiting their own system and India exercised this option. The existing Indian Patent Act, 1970 excluded agriculture and horticultural methods of production from patentability. The *sui generis* system for protection of plant varieties was developed integrating the rights of breeders, farmers and village communities, and taking care of the concerns for equitable sharing of benefits. It offers flexibility with regard to protected genera/species, level and period of protection, when compared to other similar legislations existing or being formulated in different countries<sup>1</sup>. The Act covers all categories of plants, except micro-organisms. The genera and species of the varieties for protection shall be notified through a gazette, after the appropriate rules and by-laws are framed for the enforcement of the Act.

## Objectives

The objectives of the Act are as follows:

- (i) To provide for the establishment of an effective system for protection of plant varieties.
- (ii) To provide for the rights of farmers and plant breeders.
- (iii) To stimulate investment for research and development and to facilitate growth of the seed industry.
- (iv) To ensure availability of high quality seeds and planting materials of improved varieties to farmers.

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The printed version of the Act is published in the Newsletter of Seed Association of India<sup>2</sup>. The Act has 11 chapters and is divided in 97 clauses. The first chapter has title, and the definitions used in context of the Act. The last chapter is on miscellaneous clauses. The other nine chapters deal with PPVFR authority, registration of plant varieties, duration and effect of registration and benefit sharing, surrender and revocation of certificate, farmer's rights, compulsory licence, plant varieties protection appellate tribunal, finance, accounts, audit, infringement, offences and penalties, etc.

### Some important definitions

Some of the important definitions in the context of the Act include the following:

#### *Variety*

A plant grouping except microorganisms within a single botanical taxon of the lowest known rank, which can be

- (i) defined by the expression of the characteristics resulting from a given genotype of a plant of that plant grouping;
- (ii) distinguished from any other plant grouping by expression of at least one of the said characteristics; and
- (iii) 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.

#### *Extant variety*

A variety available in India which is

- (i) notified under section 5 of Seeds Act, 1966, or
- (ii) farmers' variety, or
- (iii) a variety about which there is common knowledge, or
- (iv) any other variety which is in public domain.

#### *Essentially derived variety*

A variety shall be said to be essentially derived when it:

- (i) is predominantly derived from such initial variety, or 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;
- (ii) is clearly distinguishable from such initial variety, and
- (iii) 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.

#### *Farmer*

Any person who

- (i) cultivates crops 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.

#### *Farmers' variety*

A variety which

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

### Salient features of the Act

#### *Authority*

The Central Government shall establish an Authority to be known 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.

#### *Eligibility*

For a variety to be eligible for registration, it must conform to the criteria of novelty, distinctiveness, uniformity and stability (NDUS), as described below [Section 15 (1)–(3)].

For the purposes of the Act, a new variety shall be deemed to be:

- (a) *Novel*, if, at the date of filing of the application for registration for protection, the propagating or harvested material of such a variety has not been sold or otherwise disposed of by or with the consent of its breeder or his successor for the purposes of exploitation of such variety
  - (i) in India, earlier than one year,
  - (ii) or outside India, in the case of trees or vines earlier than six years, or, in any other case, earlier than four years, before the date of filing such applications.

Provided that a trial of a new variety which has not been sold or otherwise disposed off shall not affect the right to protection.

Provided further that the fact that on the date of filing the application for registration, the propagating or harvested material of such variety has become a matter of common

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knowledge other than through the aforesaid manner shall not affect the criteria of novelty for such variety.

(b) *Distinct*, if it is clearly distinguishable by at least one essential characteristic from any other variety whose existence is a matter of common knowledge in any country at the time of filing of the application.

(c) *Uniform*, if subject to the variation that may be expected from the particular features of its propagation, it is sufficiently uniform in its essential characteristics.

(d) *Stable*, if its essential characteristics remain unchanged after repeated propagation or, in the case of a particular cycle of propagation, at the end of each such cycle.

The variety will be subjected to such distinctiveness, uniformity and stability tests as shall be prescribed.

### *Application form*

Every application for registration will have to be accompanied with the following information [Section 18 (a-h)]:

(a) denomination assigned to such variety by the applicant;

(b) an affidavit sworn by the applicant that such variety does not contain any gene or gene sequence involving terminator technology;

(c) the application should be in such form as may be specified by regulations;

(d) a complete passport data of the parental lines from which the variety has been derived along with the geographical location in India from where the genetic material has been taken and all such information relating to the contribution, if any, of any farmer, village community, institution or organization in breeding, evolving or developing the variety;

(e) a statement containing a brief description of the variety, bringing out its characteristics of novelty, distinctiveness, uniformity and stability as required for registration;

(f) such fees as may be prescribed;

(g) contain a declaration that the genetic material or parental material acquired for breeding, evolving or developing the variety has been lawfully acquired; and

(h) such other particulars as may be prescribed.

The conditions stated above (a-h), shall not apply in respect of application for registration of farmers' varieties.

### *Period of protection*

The certificate of registration issued under section 24 or sub-section 98 of section 23 shall be valid for nine years in the case of trees and vines and six years in the case of other crops, and may be reviewed and renewed for the remaining period on payment of such fees as may be fixed

by the rules made on this behalf subject to the conditions that the total period of validity shall not exceed

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

(ii) in the case of extant varieties, fifteen years from the date of the notification of that variety by the Central Government under Section 5 of the Seed Act, 1996, and

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

### *Payment of annual fee*

The Authority may, with the prior approval of the Central Government, by notification in the Official Gazette, impose a fee to be paid annually, by every breeder of a variety, agent and licensee thereof registered under this Act determined on the basis of benefit or royalty gained by such breeder, agent or licensee, as the case may be, in respect of the variety, for the retention of their registration under this Act [Section 35(1)].

### *Breeders' rights*

The certificate of registration for a variety issued under this Act shall confer an exclusive right on the breeder or his successor or his agent or licensee, to produce, sell, market, distribute, import or export of the variety [Section 28 (1)].

### *Researchers' right*

The researchers have been provided access to protected varieties for bona fide research purposes [Section 30]. This Section states, 'Nothing contained in this Act shall prevent (a) the use of any variety registered under this Act by any person using such variety for conducting experiments or research; and (b) the use of a variety by any person as an initial source of a variety for the purpose of creating other varieties provided that the authorization of the breeder of a registered variety is required where the repeated use of such variety as a parental line is necessary for commercial production of such other newly developed variety'.

### *Farmers' rights*

The farmers' rights of the Act define the privilege of farmers and their right to protect varieties developed or conserved by them [Chapter VI]. Farmers can save, use, sow, resow, exchange, share and sell farm produce of a protected variety except sale under a commercial marketing arrangement (branded seeds) [Section 39 (1), (i)-(iv)]. Further, the farmers have also been provided protection

of innocent infringement when, at the time of infringement, a farmer is not aware of the existence of breeder rights [Section 42 (1)].

A farmer who is engaged in the conservation of genetic resources of landraces and wild relatives of economic plants and their improvement through selection and preservation, shall be entitled in the prescribed manner for recognition and reward from the Gene Fund, provided the material so selected and preserved has been used as donor of genes in varieties registrable under the Act.

The expected performance of a variety is to be disclosed to the farmers at the time of sale of seed/propagating material. A farmer or a group of farmers or an organization of farmers can claim compensation according to the Act, if a variety or the propagating material fails to give the expected performance under given conditions, as claimed by the breeder of the variety.

### *Communities rights*

The rights of the communities as defined, provide for compensation for the contribution of communities in the evolution of new varieties in quantum to be determined by the PPVFR Authority [Section 41 (1)].

### *Registration of essentially derived varieties*

The breeder of the essentially derived variety shall have the same rights as the plant breeder of other new varieties, which include production, selling, marketing and distribution, including export and import of the variety. The other eligibility criteria for award of registration are also the same as for new variety registration under the Act [Section 23(1), (6)].

### *Compulsory license*

The authority can grant compulsory license, in case of any complaints about the availability of the seeds of any registered variety to public at a reasonable price. The license can be granted to any person interested to take up such activities after the expiry of a period of three years from the date of issue of certificate of registration to undertake production, distribution and sale of the seed or other propagating material of the variety [Section 47(1)].

### *Benefit sharing*

Sharing of benefits accruing to a breeder from a variety developed from indigenously derived plant genetic resources has also been provided [Section 26(1)]. The authority may invite claims of benefit sharing of any variety registered under the Act, and shall determine the quantum of such award after ascertaining the extent and nature of the

benefit claim, after providing an opportunity to be heard, to both the plant breeder and the claimer.

### *National Gene Fund*

The National Gene Fund to be constituted under the Act shall be credited thereto:

- (a) The benefit sharing from the breeder.
- (b) The annual fee payable to the authority by way of royalties.
- (c) By the compensation provided to the communities as defined under Section 41(1).
- (d) Contribution from any national and international organization and other sources.

The fund will be applied for disbursing shares to benefit claimers, either individuals or organization, and for compensation to village communities. The fund will also be used for supporting conservation and sustainable use of genetic resources, including *in situ* and *ex situ* collection and for strengthening the capabilities of the panchayat in carrying out such conservation and sustainable use [Section (45)].

### *Plant Variety Protection Appellate Tribunal*

The Tribunal will be established by a gazette notification by the Government to exercise jurisdiction, powers and authority conferred on it under this Act. The Tribunal will consist of Judicial as well as Technical members.

### *Consideration for effective implementation of the Act*

India has opted for a *sui generis* system of protection of plant varieties and has provided for farmers' rights, breeders' rights, researchers' rights and equity concerns in the same legislation. All these provisions in one legislation make it a unique Act, when compared to similar legislations in other countries. Although a few countries have provided for farmers' rights, all types of rights for farmers, viz. as breeder, conserver, seed producer and consumer have not been considered elsewhere in the world. It is this uniqueness of the Act which poses many challenges for its effective implementation. The balance between breeders' rights and farmers' right could be tough to strike. A critical analysis of the provisions in the Act is therefore essential for its effective implementation.

### *Notification of crops species*

As a first step towards implementation of the Act, the Government shall have to notify the crops in order to establish the system of listing of plant varieties for the pur-

pose of registration. The criteria for selecting the crops could be the crops on which we are dependent for food and nutritional security, including major cereals, pulses, oilseeds, vegetables and fruits crops. Crop species important for India in the world trade, species of Indian origin, crops where India could benefit from introduction of new germplasm and foreign investment, could be the other priorities for consideration.

### *Awareness generation*

There is a need to create awareness among scientists, policy makers and breeders as well as farmers, village communities and the private seed sector. Wide circulation of the provisions of the Act may be done in all research organizations directly or indirectly involved in development of new crop varieties. For farmers and village communities, awareness generation and information empowerment is a must through vernacular press, radio, television and the Internet. A standing committee on awareness generation and information empowerment under the Plant Varieties and Farmers' Rights Protection Authority may be set-up for ensuring the effective spread of credible information concerning the rights of plant breeders and farmers as cultivators, breeders and conservers<sup>3</sup>. In order to ensure that the farmer as a breeder and conserver secures the recognition and reward provided under the Act, there is need to establish resource centres for farmers' rights and entitlements.

### *Institutional structures for effective implementation*

The PPVFR Authority proposed to be established under the Act has a crucial role to play for effective implementation of the Act. The duty of the Authority is to promote, by such measures as it may think fit, the encouragement for the development of new varieties of plants and to protect the rights of the farmers and breeders [Section 8 (1)]. In particular, the authority is to provide measures for:

- (a) The registration of extant and new plant varieties subject to such terms and conditions and in the manner as may be prescribed.
- (b) Developing characterization and documentation of varieties registered under this Act.
- (c) Documentation, indexing and cataloguing of farmers' varieties.
- (d) Compulsory cataloguing facilities for all varieties of plants.
- (e) Ensuring that seeds of the varieties registered under this Act are available to the farmers and providing for compulsory licensing of such varieties, if the breeder of such varieties or any other person entitled to produce such variety under this Act does not arrange for production and sale of seed in the manner as may be prescribed.

(f) Collecting statistics with regard to plant varieties, including the contribution of any person at any time in the evolution or development of any plant variety, in India or in any other country, for compilation and publication.

(g) Ensuring the maintenance of the Register of plant varieties.

The Authority has the responsibility to provide for all the activities mentioned through appropriate institutional structures. There could be three options for the Authority to undertake all the activities:

- (a) The Authority can appoint an independent organization directly under its control to devise assessment procedures for candidate varieties and other institutional mechanisms.
- (b) The Authority can take advantage of the existing facilities and infrastructure available at ICAR crop-based institutions, State Agricultural Universities, Krishi Vigyan Kendras and All India Coordinated projects.
- (c) The ICAR as an organization can establish a suitable system independently.

Any one of the proposed institutional mechanisms has however a single objective of effective implementation. The assessment of candidate varieties should be fair to provide a level playing field to all categories of breeders such as institutions, breeders, farmers and the private sector.

The effective implementation of the Act hinges on the DUS testing and the Authority should ensure trust, transparency, accountability and efficiency for carrying out such tests. Suitable farm and other infrastructure facilities for DUS testing, including seed storage facilities need to be created. It is advisable to carry out DUS testing in at least two locations in each major-agro climatic region relevant to the crop for at least two successful years<sup>4</sup>. Such an evaluation procedure would create acceptance when followed for all types of varieties among all the stakeholders.

It is imperative to define essential and additional characters for DUS testing (morphological, biochemical and molecular characters), and identification of possible reference varieties for each crop species. The scope for using UPOV guidelines on DUS testing, available for various crops as possible templates for formulation of DUS guidelines that may suit specific requirements in harmony with our legislation may also be considered. In order to test the novelty, a database of the existing varieties may have to be developed with effective linkages with other such database available internationally.

The Authority may also have to decide about the minimum passport data required to be submitted with the application. Many germplasm accessions used for the development of new varieties, even when accessed from gene banks/breeders collection may not have full recorded passport data. In such a case, acknowledging the source of parental material, may be considered sufficient.

Further, information regarding parental lines as required under section 18(e), needs to be restricted to immediate parents. The term parental line is ambiguous here since all the varieties developed by traditional methods may be having many parental lines. It could be appropriate to include information on immediate parents, specifically in case of hybrids only.

It would be difficult to ascertain uniformity criteria for composites, synthetics, multilines and multiparent hybrids. Such consideration may have to be included in the DUS guidelines for testing of these particular types of varieties.

In addition to DUS test centres and database development, attention should be paid to the role of the National Gene Bank at the National Bureau of Plant Genetic Resources as a National repository, and to the establishment of recognized DNA fingerprinting centres for conflict resolution.

### *Storage of reference samples*

The storage of 'reference samples' is an important component of this Act. It requires enough and appropriate storage infrastructure. The Authority would, therefore, have to create appropriate infrastructure for providing storage facilities at selected locations in the country. Since the storage of vegetatively propagated materials requires specialized techniques and competence, scientific personnel need to be trained accordingly and specific centres would have to be identified and equipped for this purpose. The facilities and technical expertise available with the National Gene Bank at National Bureau of Plant Genetic Resources, New Delhi and its regional stations could also be utilized.

### *The fee structure*

The fee for registration and other processes as well as annual fee should be reasonably determined keeping in view the possible commercial value of the crop, the national interests, and the desirability of generating enough resources for financial autonomy of the Authority. Section 19 of the Act requires a breeder to submit a quantity of seeds along with 'parental lines' according to the standards specified by the regulations. Also, the seeds deposited are to be conserved and regenerated if necessary for DUS testing for maintenance. A separate fee may be assigned for conservation and regeneration, besides a testing fee.

### *Farmers' rights*

A farmer who has bred or developed a new variety shall be entitled for registration and any other protection as a breeder. Since the definition of an extant variety according to section 2(j) includes a farmer's variety also, which may be landrace or a wild relative about which farmers

possess common knowledge, the uniformity criteria in case of registration of these varieties is difficult to ascertain. Such consideration may have to be included in the DUS guidelines for testing of these particular types of varieties. Further, there could be innumerable farmers' varieties (landraces for registration and their data are scattered and sometimes overlapping). A technical questionnaire to bring out unique characters and area of adaptability could be developed initially to document these varieties. The time-frame to be provided for documentation of information relevant for registration of extant varieties (farmers' varieties or released varieties) under Section 15(2) may be restricted to three years.

A farmer/farmer's organization [Section 39(2)] can claim compensation if a variety fails to give the expected performance under given conditions. Such a claim may have to be paid by the breeder as directed by the Authority after giving due hearing to both the parties, namely the farmer and the breeder. Since the variety is to be tested for DUS by the Authority at the time of registration, and if the performance of the variety is not found to be as claimed by the breeder, the Authority can deal with claims of failure of performance and could decide about such claims independently, instead of the courts.

Section 42 regarding protection to farmers for innocent infringement is also not clear as to how to define innocent infringement. Such a clause may not stand in the court of law in view of the other laws where ignorance is not a reason to have protection from legal obligations.

### *Lawfully acquired parental material*

Section 18(j) regarding information to be submitted along with an application, requires the applicant to certify that the genetic or parental material used for breeding the variety has been lawfully acquired. Such declaration would be difficult in cases where the passport information relating to the material has not been recorded.

Further, it would not always be possible for a breeder to get information relating to the contribution of a farmer, village community, etc. since there may not be an authentic source of such information. Such information, if not available, may be left to the Authority to decide, which can invite claims later through media/public notices, etc.

### *Integrated implementation*

There is a need for the effective and integrated implementation of various new acts/bills concerning biodiversity, environment and seed, which have some interphases because of the common commodity that is the 'seed'. These are in the area of benefit-sharing mechanisms for conservers of agro-biodiversity and the establishment of a fund for claims of benefit sharing.

The Biological Diversity Act (2002), dealing with conservation and access to biodiversity and the Protection of Plant Varieties and Farmers' Rights Act, along with the Seed Act (the Seed Act is under revision) may be simultaneously and effectively integrated for smooth implementation<sup>5</sup>. Although some overlapping issues have been sorted out to bring harmony between the Seed Act and the PPVFR Act, in the New Seed Policy 2002 (ref. 6), implementation of the PPVFR Act and Biological Diversity Act may be harmonized further.

### Capacity building

Periodic training programmes should be organized for scientists and technical personnel involved in the DUS system of testing and in local languages for tribal communities and farmers on various aspects of the Act. Also, research institutions should undertake participatory breeding programmes with farm families, including spread of knowledge regarding conservation of traditional local varieties and registration thereof. Rural knowledge centres can be organized with regard to the different legislations relating to seeds, biodiversity conservation, and plant breeding. In addition, agricultural universities can include information on relevant legislations in their curriculum for undergraduate courses.

### National Gene Fund

The National Gene Fund is proposed to be utilized for supporting conservation and sustainable use of genetic resources, including *in situ* and *ex situ* collections. Some allocation may be earmarked for *ex situ* conservation of varieties and maintenance of gene banks. The funds are also to be used for recognizing and rewarding the contributions of farmers engaged in the conservation and en-

hancement of agro-biodiversity. Transparent and credible methods of recognizing individual and community contributions will have to be developed. The manner in which the community award should be utilized may be left to the communities. In this respect, there could be linkages between the provisions of this Act and the Biodiversity Management Committees proposed to be established at the Panchayat/Local Body level under the Biodiversity Act passed recently<sup>3</sup>. The administration costs relating to this Fund may however be borne by the Government of India.

The Indian PVPFR Act thus appears to be an effective *sui generis* system providing a balance between plant breeders' rights along with farmers' rights and researchers' rights. The impact of the Indian *sui generis* system will be felt only after its effective implementation, and later in the areas of research and development, and ultimately in the national food and nutritional security.

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