

Biodiversity Protection, Farmers and Breeders Right

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Lecture 28 : Protection of Plant Varieties and Farmers' Right 2001 - Major Provisions of the Act

Welcome to the lecture 28, which is to do with the Protection of Plant Varieties and Farmer Rights Act 2001. And in this lecture, we will take up what are the major aspects of this particular legislation. These are the concepts that we would cover in the lecture. The objective of plant variety protection, definition of variety, what are the different varieties that are eligible for protection, criteria for registration, what do we mean by a plant variety protection right, and a brief view into the DUS testing guidelines. These are the keywords for the lecture. So, when we look at the context of plant variety protection in India, it is important to consider India's policy mandate at the time of the TRIPS agreement, post the ratification of it.

India is also a member country to the Convention on Biological Diversity in 1992. So, on one hand India is a member country to CBD, on the other hand India is a member country to also the TRIPS agreement. If you go back in time, the policy considerations that India was dealing with at that point of time is one is the compliance under the CBD, and the other is the compliance under the TRIPS agreement. And India being a very important country that fostered agriculture and agricultural research and crop improvement, had several concentrations to look at when it came to identifying the conservation perspective on one end, and the other looking at whether and how we should look at intellectual property protection for plant varieties.

So, it is at that stage we need to keep in mind that India chose to enact complementary legislation the Biological Diversity Act 2002, and the Plant Variety Protection and Farmer Rights Act 2001. If one looks into the committee reports where stakeholder consultations were done, I refer to you the notings of the Dr. M.S. Swaminathan, who mentioned that these two legislations need to be complementary in nature to for India to take the best benefit or the best potential of the compliance.

Then at that stage we are looking at the context of biologically based resources. When we look at this context, we are looking at what we are looking at the realm of intellectual property protection that is available. Predominantly it is patents, plant variety protection, and in some sense some aspects of GI, where plant resources are also used in the backdrop. So, the enactment of the Plant Variety Protection and Farmer Rights Act is to provide an effective system for the protection of plant varieties to recognize the role of farmers and

breeders. So, the perspective of recognizing the farmers and breeders on an equal footing is what is the backdrop of this legislation.

So, in the post-trip scenario, we look at two different legislations that are complementary in nature, one with respect to CBD compliance and the other in relation to TRIPS. It is important to examine the preamble of the Plant Variety Protection and Farmer Rights Act 2001. I read to you, the act is to provide an establishment of an effective system for protection of plant varieties, the rights of farmers and plant breeders, and to encourage the development of new varieties of plants. It is important to note the relevance of farmers and breeders in the overall improvement of plant breeding. So, this is where we see India recognizing both as a very important component of the backdrop of the legislation, and any stimulation of innovation and plant breeding comes from both these quarters.

And it is in that context that India also recognizes the need to safeguard the rights of farmers in relation to plant varieties, because farmers were the custodians of plant variety conservation. If you look at the preamble, the right of farmers in respect of their contribution made at any time in conserving, improving, and making available plant genetic resources for development of new plant varieties, this has been specifically recognized. So, with that in mind, when we look at the enactment, we are looking at the this is the first legislation treating both of them equally. The Plant Variety Protection Authority was established. India adopted a sui generis system taking UPOV as a model, the backdrop of UPOV as a model, inculcating some of the aspects of UPOV into its legislation.

So, there are several varieties that can be protected under the plant variety protection. The duration of the protection period for registered varieties differs. So, we come to the definition of variety under the Plant Variety Protection Act, which is under section 2 (za). If you see the definition of the plant variety, it follows in lines with the general definition also provided under the UPOV. And this is where we are looking at the variety being at least distinguishable by one characteristic, and its suitability for being propagated is important, and such a characteristic should remain unchanged.

And in the definition itself, you have the recognition of different types of varieties as you can see here, extant varieties, transgenic, former varieties, and essentially derived varieties. Now, we have been talking about the context of characteristics. Does the act also define what are these characteristics? Yes, the act defines under 2 (h) what are essential characteristics. Now, essential characteristics are those which are heritable traits which are determined by the expression of one or more genes. So, whenever we are looking at the improvement of a particular variety or registration of a variety, we are looking at what we are looking at the enhancement of its performance or a value in the essential characteristics

of that particular variety.

So, what are the different categories that are recognized under the act? We have new variety, extant variety, and essentially derived variety. New varieties are novel varieties in terms of the characteristic. Now, under the extant varieties, you have 3 different ones, varieties of common knowledge, variety which is notified under the seed act, and then former variety. So, when we talk about a new variety, it means a variety which is developed by any agency or an individual, it can include also a farmer. Also it could mean varieties which are developed abroad or they are also used in a breeding line which are available in terms of the application submission in India in these definite ways.

So, when we look at the context of plant variety protection, we are looking at this in terms of availability, it can be a new development, it can also mean that varieties are existing and but there is a certain time period which is provided and it should be with respect to that. Some examples are provided here. This is a new variety and this is how you see the detail in the plant variety journal. This is the name and it is cotton, you have the certificate number, who is the applicant and importantly what are the distinctive characteristics for which the registration has been applied for. This is another one which is a maize hybrid and the distinctive characteristics are described in detail.

Now, when we come to the context of extant varieties, we are looking at three different types. Varieties of common knowledge, farmer variety, varieties notified under the seeds act. So, time to time there is a specific notification under the seed act that these are all the varieties that will be allowed or available for registration. So, when you want to register under the this particular category, it should have been prior notified under the seed act that is a requirement. Farmer varieties are those where farmers have been traditionally improving these varieties and they are also open for registration.

And of course, because the perspective of the legislation is also to look at the protection or the conservation of plant varieties in terms of conservation of the germplasm, varieties of common knowledge are also recognized. So, we see several examples of this where you see the category VCK, it means a variety of common knowledge. This is a maize variety and with some distinctive character. Similarly you see extant notified, then in other cases also we are looking at. So, you when you look at the examples which are given here, they give you an instance of what is the crop variety, what type is the category, who is the applicant and what are the distinctive characteristics.

We come to the context of essentially derived varieties. This is a yet another category which is available for registration. So, as the name suggests, it means that there is a background plant variety and from there there is some derivative. Now how do you look

at this particular context? The derivation can be by any of the following methods by genetic engineering that is I have a maize plant or a rice plant, in that I have created a specific change. Now the next generation is created with that specific change that means, the other background is the same just only that one characteristic is different.

So, what do we call this? We call it essentially derived from that background that is that is the only change. Similarly in the case of mutation breeding, mutation is achieved on a particular characteristic. So, culture variations, somogonal variations are also recognized under this and backcross breeding is also one aspect. So, when we look at essentially derived characteristic, what are we looking at? We are looking at it is predominantly derived from a particular variety which is called the initial variety that is the main backdrop of it. And all other characteristics are retained except for one characteristic which is changed.

So, therefore, the difference between an initial variety and an essentially derived variety is clearly distinguishable by that particular change in the characteristics, otherwise it is essentially therefore, that is where we look at the essentially derived variety. So, all transgenic plants are essentially derived varieties. So, suppose let us say a breeder has come up with several essentially derived varieties from one basic initial variety. So, the background is the same, one change I have created, one intervention of genetic engineering, second intervention. So, they are called as EDV1, EDV2 in that series.

EDV is the abbreviation for essentially derived variety. So, they should be numbered consecutively EDV1, EDV2, EDV3. And this is one example that you see here which is for cotton under the EDV category, and the specific characteristics are again mentioned here. Farmer variety is a large grouping of varieties which are registered under the Plant Variety Protection Act. In fact, this legislation has been very enabling when it comes to farmer varieties.

If you look at the plant variety protection the journal, you can find that there are several plant variety registered as farmer varieties. A whole lot of rice varieties, wheat and maize varieties are recognized as farmer varieties. So, farmer certificates have been given to these particular. So, what is a farmer's variety? Farmer variety is something a variety which has been traditionally cultivated and developed by the farmer in his or her field. And in many other cases also it means is a wild relative or a land race or a variety about which farmers possess common knowledge.

So, when you look at local communities which have been growing certain plant species over generations and have been using them for specific purposes, some of those can also come under the context of farmer varieties. And so, therefore, we today we see a large

number of registrations when it comes to farmer varieties. Some examples are provided here, rice one particular variety called Chomala, here you have Kudrat 9, Sushil Lakshmi, this is for chickpea, Kudrat 9 is for wheat. And here you can see the application details and the category is listed as farmer and specific characteristics are also identified. So, having discussed the context of what are the different categories of plant varieties, we come to the understanding of the application for registration of a plant variety who can apply one who is a breeder, successor of a breeder, a person who is an assignee, farmer or a group of farmers, a person who is authorized on behalf of farmers and universities or public funded agricultural institutions also have a very important role in crop improvement and they have also been recognized when it comes to applicant.

These are the different places at which one can file for a registration of a variety in India. Certain prerequisites need to be met in order to be for a plant variety to be available for registration. The improvement is sought with respect to a variety, the variety should have a denomination. It is important that an affidavit should be filed that the variety for which improvement is being sought does not lead to any destruction of germplasm. And therefore, a submission that is required is that this does not contain any gene or gene sequences which will lead to termination of that particular germplasm.

The passport data of the plant had to be submitted. That means, the information in terms of its cultivable cultivation, its geographical location, and in cases where farmers are involved, institutions are involved, details of such information should be given. So, the complete passport data of the variety which has been developed including its background that is the parental lines also needs to be submitted. That is the entire process of how the cultivation has been done, where the trials have been carried out, multiple trials, multiple locations, the climatic characteristics, the conditions in which it was cultivated or grown. The characteristics specifically with respect to novelty, distinctiveness, uniformity, and stability have to be given.

And wherever the initial material has been acquired, there is also a need to submit information in terms of a declaration that those initial varieties have been sought by way of permission whenever the hybrids have been developed. The registration procedure involves submission of the application with these characteristics, the passport data, the initial details of the plant variety, the cultivation characteristics, the submission of declaration, and the affidavit together into specific forms depending on what is the type of variety as is what is given here. Now, in this case of intellectual property right, it is also you also have the technical questionnaire which should be attached. What is that questionnaire? That questionnaire is basically about the entire data in relation to the plant species that is how many, what is the yield it puts up, how many leaves are put up, what are the internodes, do they have legules, then the entire morphological characteristics,

sometimes anatomical characteristics can become relevant, sometimes oil content can become relevant that is your here you are looking at an improvement of a variety for oil content. So, therefore, that is the distinguishing characteristic.

So, these details have to be provided in the technical questionnaire. Now, we typically use also the word called compound registration particularly for hybrid varieties. The registration of a hybrid is only with respect to its, is with respect to its parents as well. That means, when we go for a hybrid registration, one has to submit the details of the parental line as well and this is exactly what we call by compound registration. Novelty is a very important characteristic and in the case of the act novelty is recognized that it is novel if at the date of filing of the application for registration for protection, the propagating or the harvested material of such variety has not been sold or otherwise disposed of by or with the consent of the breeder or its successor.

For exploitation of this variety in India earlier than 1 year, this is one scenario or in case of outside of India, particularly trees and vines earlier than 6 years or in other cases it is earlier than 4 years. So, this is the limit period. Now, wherever the trial of a new variety has been taken up. So, before the date of such an application provided that the trial of a new variety which has not been sold or otherwise disposed of. So, the trial period is not, shall not affect the right of protection, because trials are a requirement and people would know what are the distinctive characteristics.

So, the novelty loss is not there during the trial part. Then of course, we are looking at the context of common knowledge also in relation to. So, that it is a common knowledge shall not affect the criteria of novelty in case of such a variety, where we discuss the aspect of extant varieties and common knowledge. We come to the context of DUS testing, distinctness, uniformity and stability testing, which is an inherent part of the entire registration of a plant variety. Understanding this is important, because once you submit the application, you also submitting the seed material.

Now, in the case of ornamental and horticulture crops, it can be an onsite option is available. Onsite you can ask for the examination to be done, when the expert will be going to the onsite and examining the characteristics. But in all other cases, the verification of the characteristics of that variety will be done under the DUS testing. That is if I have submitted a variety for a particular characteristics, the testing will be done. So, we pay the DUS fee, and this testing is done typically at two different centers.

The crop DUS guidelines are available in this particular link. That means, for every crop variety, be it rice or a legume, there are different guidelines available. Similarly, climatic conditions are also need to be taken into consideration for testing of that particular variety.

So, when we look at the DUS centers, the DUS centers are also earmarked with respect to that climatic zone. And they may be either tested in the rabi or sometimes summer winter part of it is considered alternately.

This is how it is done. Now, when you look at the DUS centers, the centers are into these particular types, the lead centers as well as collaborating centers. So, what is it that is verified, whether the characteristic is distinctive in terms of the registration, is it uniform in that generation and across generations that is in the next generation also do we see the stability of that particular characteristic or the trait. Sometimes there are special conditions that need to be taken into consideration for the understanding or rather the testing of a distinctiveness, because the distinctive characteristic may be expressed under a particular condition, in which case special tests are available. So, in such applications, the applicant must also submit that under this environmental condition you can better see the distinguishable trait or rather the distinguishable trait is more clearly observable under that particular condition. So, this is a very elaborate procedure and once the DUS testing is completed, then subject to the other conditions the variety is announced or registered.

Now, this is one form of intellectual property right in which the applicant can participate in the process when examination is going on. So, experts are announced and they are announced publicly on the website. So, when the expert goes to the DUS center, the applicant is provided an opportunity to also be there when the examination of that variety is happening. Denomination is a very important characteristic and with respect to regulation number 8 of the plant variety farmer rights regulation 2006, denomination has to be meeting certain criteria. It should not be a part of a name of an emblems and names act, it should not be solely or partly based only on geographical names, it should not be confusing or misleading to the public.

Whenever a denomination is given, the same denomination should be used for the convention countries or as the agreement between two countries happens. There may be a clash between an existing trademark and a denomination and that should be completely avoided. No such denomination should be given which is against public order and a denomination should be clearly available when it means the with respect to other such denominations. That is if there are a group of same series of plants, then denomination should be carefully looked at with respect to that, if there are a group of same in that same grouping.

So, they could be very closely related species. So, the denomination should be carefully given, it can be a combination of letters, symbols and it can be even in the local language Hindi or in English. So, when we come to the plant variety protection right, what do we mean? It is an exclusive right or the breeder or a successor, his agent or the licensee to

produce sell, market, distribute, import, this is what it confers. So, the breeder may authorize a person to produce, sell, market or otherwise deal with a variety registered under this act, subject to the limitations and conditions. Now, the duration of protection of registered varieties differs for trees and vines is 18 years from date of grant of certification, for other crops 15 years, for extant varieties which are notified under the seeds act, 15 years from the date of notification under the particular section. We come to the conclusion and as we have noted, the legislation brings on an equal footing plant breeders and farmer rights.

The several categories that are registered can be registered under the act are new varieties, extant varieties, farmer varieties and essentially derived varieties. Criteria for registration must be met for seeking IP protection on plant varieties. These are the few references for the lecture. Thank you.