

# **Genetic Diversity in Seeds as Global Commons Alternatives to protect the genetic diversity from IPRs than by IPRs**

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## **ABSTRACT**

Traditionally farmers have maintained high levels of crop genetic diversity as insurance for their subsistence farming. The heterogeneity in the crop genetic makeup allowed for yield security and also provided the necessary buffer against environmental variation (nutrition, health, climate, soil conditions and pests).

Over the years with the development of modern breeding and the creation of new improved crop varieties farmers have switched to commercial agriculture, replacing their diverse land races. As a result areas previously rich in agricultural bio diversity have been replaced with genetically homogenous fields. Along with this came the heightened awareness that while incentives existed for farmers to develop new varieties, there were no perceptible rewards for genetic resource conservation. The disparity between rewards to genetic resource that form the basis of development of new crop varieties and rewards accruing to new varieties that are products of research has been pointed out.

The issue of farmer's right was first raised as a global concern in 1986, after which the FAO adopted the International Undertaking on Plant genetic resources(IU) .Several years later FAO officially recognized the concept of farmer's rights but the resolution as not legally binding. In 2001 after years of debate a legally binding international agreement on farmer's rights was reached with the adoption of the FAO International treaty on PGRFA.

The treaty's objectives are the conservation and sustainable use of genetic resources and the equitable sharing of benefits arising from their use. A multilateral system for access and benefit sharing established under the treaty, governs the exchange of germ plasm from 35 food crops and 29 forage plants.

A set of measures is called for to address the compatibility of seed laws and plant variety protection to take into account communities' needs. Literature abounds on the topic to recommend reinforcing the traditional sharing system with a system of peer production and distribution of germ plasm as an alternative way to develop crop varieties and dynamically sustain genetic diversity.

Measures are also needed to strengthen farmers, practices of seed saving and sharing and to further non commercial, non profit and co-operative exchange. Relaxing seed regulations and granting farmer immunity from patents and plant breeders infringement could support this. Considering the collective nature of plant genetic resource management, trusteeship by farmers is suggested in such a way that it accepts personal contribution to a common good and a form of ownership derived from that contribution. In the countries of south Asia where agricultural modernization is being justified to ensure food security which is vying with traditional form of seed saving. It has

to be emphasized that the controls brought in the seed system, controls the entire food system.

The objective of this paper would be to explore and give shape to the alternatives that emphasize the fact that the farmers varieties need to be protected from IPRs and not by IPRs.

#### KEYWORDS

*Plant Genetic diversity, Farmers' rights, IPR*

From time immemorial, the social value of agro biodiversity has been derived from its capacity to contribute to the agricultural system upon which human kind depended upon. Traditionally farmers have maintained high levels of crop genetic diversity as insurance for their subsistence farming. The heterogeneity in the crop genetic makeup allowed for yield security and also provided the necessary buffer against environmental variation (nutrition, health, climate, soil conditions and pests).

Over the years with the development of modern breeding and the creation of new improved crop varieties farmers have switched to commercial agriculture, replacing their diverse land races. As result areas previously rich in agricultural bio diversity have been replaced with genetically homogenous fields. Along with this came the heightened awareness that while incentives existed for farmers to develop new varieties, there were no perceptible rewards for conserving the genetic resource. Countries that have opposed plant monopoly rights have a strong common heritage culture where knowledge of farming and cultivation techniques and plant varieties have been shared by the communities and passed on to the next generation.

The disparity between rewards to genetic resource that form the basis of development of new crop varieties and rewards accruing to new varieties that are products of research has been pointed out in the arguments for protecting farmer' rights.

The story of Larry Proctor who brought a bag of mixed beans from Mexico is often quoted as a case of misappropriation of genetic resources. The mixed bag of beans from Senora in Mexico was later separated as black and yellow and planted over several seasons and the best plants were replanted and selected. A few years later proctor declared his selected beans as an invention and applied for US IPR on the plant. With the IPR on hand Proctor's Agro Company started enforcement actions against importers warning them of infringement and the need to pay royalties. Ultimately thousands of farmers who cultivated the beans for generations were economically impacted . The patent had to be challenged and after a long battle the rights of the farmers were retrieved. The case of the enola bean which was named after the wife of Proctor is not an isolated one. There are other examples like the Turkish landrace of wheat that supplied American varieties with genes for resistance to stripe rust, a contribution estimated to have been worth \$50 million per year. The Indian selection that provided sorghum with resistance to green bug has resulted in \$12 million in yearly benefits to American agriculture. An Ethiopian gene protects the American barley crop

from yellow dwarf disease to the amount of \$150 million per annum. . It is no exaggeration to say that the plant genetic resources received as free goods from the Third World have been worth untold *billions* of dollars to the advanced capitalist nations.

Following this Farmers' rights as a movement began to take hold in the 1980s, growing out of the dissatisfaction of a number of groups regarding the waning power of farmers to control farming methods and the lack of compensation for their contributions to plant genetic diversity. The movement seeks recognition that most of the world's crop germplasm has resulted from thousands of years of selective breeding by farmers.

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While the treaty recognizes farmer's enormous contribution to the crop genetic diversity that forms the basis of all food production, it does not include an official definition of farmer' right instead it obliges the contracting parties to protect and promote farmer's rights and suggests measures for doing so. These measures are generally regarded as the elements of farmer's rights in the present debate.

They include:

- The protection of traditional knowledge
- Fair and equitable benefit sharing
- Participation in decision making
- The right to save, use share and sell farm saved seed.

The articulation of farmer's rights in the Indian legislation is intended to reflect the farmer's rights as stated in the International treaty. Article 39 of the legislation states that farmers who have bred or developed a new crop variety shall be entitles to the same plant breeder rights to which breeders themselves are entitled. From a review of literature on the PVP law one finds that the PVP law how good it appears, only privatises the planting material. For a group of farmers who toil to get a farmer's variety PVP certificate there is no clarity on how counter claims on the same variety from another farmers is going to be dealt with. This raises the question how appropriate the PVP system in the Indian context? Also more PVP certificates being issued only means more breeders having control over plants and seedling material which hitherto was freely available to the farmers. In the light of more patent like rights and more patents themselves what is the role of PVP?

With respect to the impact of international legislations the Indian PVP law is greatly influenced by the UPOV (Union for the protection of new varieties of plants). UPOV 91 is designed to protect products of modern bio technology and essentially derived crop varieties. The key criteria of UPOV followed by laws means that the plant variety must be novel , distinct, unique and stable (DUS criteria)These criteria contradict the needs of farmers involved in farming especially organic farming Uniform is the opposite of diverse. Varieties that are able to adapt to different conditions are not stable. Novelty and distinctness apply to varieties that are stable and uniform.

The impact of tightening PVP system will have a large impact on farmer's seed practices, particularly farmer's access to seeds. The seed bill of 2004 now 2010 was formulated with the intent of regulating the seed quality. It focuses on private participation in seed production and distribution achieved through a system of compulsory licensing. The seed bill has been critique to have taken away the little benefits offered by the PVP law.

In the light of legislations that are having a far reaching impact on farmer saved seeds a set of measures are called for to address the compatibility of seed laws and plant variety protection to take into account communities' needs. Literature abounds on the topic to recommend reinforcing the traditional sharing system with a system of peer production and distribution of germ plasm as an alternative way to develop crop varieties and dynamically sustain genetic diversity.

Achieving repossession, manifested as seed sovereignty, will not be easy. What is required is simultaneous and linked development of concepts and applications among farmers, plant scientists, seed vendors, public institutions and civil society advocacy groups in the face of corporate and state opposition. Considering the collective nature of plant genetic resource management stewardship by farmers is suggested in such a way that it accepts personal contribution to a common good and a form of ownership derived from that contribution.

“A prominent exemplar of this approach is the General Public License (GPL) developed by Richard Stallman and promulgated by the Free Software Foundation. Software released under the GPL is copyrighted and made freely available through a license that permits modification and distribution as long as the modified software is distributed under the same GPL license through which the source code was originally obtained. That is, source code and any modifications must be freely accessible to others (hence “open source”) as long as they in turn agree to the provisions of the GPL. Note that the “viral” effect of the GPL enforces continued sharing as the program is disseminated. Just as importantly, the GPL also prevents appropriation by companies that would make modifications for proprietary purposes since any software building on the licensed code is required to be openly accessible. Thus, software developed under the GPL is released not into an open access commons, but into a “protected commons” populated by those who agree to share”. (Kloppen Berg )

Biological open source is no panacea. It is a tool, one means of beginning a process. But it is a plausible and fecund modality for impeding further dispossession and for the

pursuit of concrete initiatives for the actual repossession of a relatively autonomous space within which practices and ideas with transformative potential can be enacted. A number of nations, including Brazil, India, and the Philippines have passed or are considering laws that purport to provide a framework for “collective IPRs,” but farmers and indigenous peoples have so far lacked the political power to make them substantially functional. Although over the past fifteen years a wide variety of proposals have been made for legal recognition of “traditional resource rights” and “community-based” or “informal” innovation.( ProDiversitas)

Other alternatives include elaborating the work done hitherto on Community Intellectual Rights drawn from the acts drafted by Philipines and India. Community seed banks have been considered a viable way of farmers accessing their seeds .It is learnt from various experiences that support mechanisms need to be put in place (.V Lewis1 and P M Mulvany)

The experiences across the world is a mixed bag of outcomes which need to be combined with concepts derived from the free open source softwear (FOSS) to facilitate free exchange without impinging on farmer’s rights.

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ProDiversitas

## A TYPOLOGY OF COMMUNITY SEED BANKS

V Lewis1 and P M Mulvany1

