

“The Role of Indian Agricultural Farmers in Creating Ecological Balance in the Nature”

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ABSTRACT: Agriculture may be defined as an integrated system of techniques to control the growth and harvesting of animal and vegetables. It is an uncomplicated endeavor comprising of technical and practical processes that helps in the maintenance of the ecological balance and protects human resources; and most importantly it is a viable food production system. This paper provides a brief overview about how the agricultural farmers' rights are intrinsically based on the link between innovation and rights over knowledge, biodiversity conservation, and the sustainable use of agro-biodiversity. However, India has framed a unique legislation called Indian Biodiversity, Act 2002, but still faces the problems in implementation and safeguarding the rights of the farmers and communities for their invaluable contribution and efforts in bringing ecological balance. It also argues that their different contributions should be recognized and respected by the International Undertaking, particularly in terms of Farmers' Rights. It is concluded that an international mechanism is urgently required to promote some level of consensus on defining and implementing these vital rights for their priceless contribution in maintaining balanced ecology.

KEY WORDS: Ecology, Ecological balance, Biodiversity Conservation, Sustainable use, Farmer, Farmers' rights, Bio-safety and Agriculture.

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“The greatest service which can be rendered to any country is to add a useful plant to its culture especially a bread grain”.

*Thomas Jefferson*¹

1. INTRODUCTION:

INDIA is an Agrarian country with around 60% of its people directly or indirectly depends upon Agriculture. In ancient times the practice of agriculture is considered to be a greatest service to the society and this practice is intertwined in their tradition and culture.

For feeding the society we need seed because, seed is vital to life. It is a priceless gift of nature, evolved, bred and used by farmers over thousands of years to produce food for the people. Farmers select, save and exchange the best seeds from a good crop to plant them again at the next sowing. Corporatization of seed and agriculture is destroying the independence of the farmer.² As farmers' knowledge, skills and practices contribute to the conservation, development, improvement, and management of Plant Genetic Resources (PGR), their different contributions should be recognized and respected by the International Undertaking, particularly in terms of Farmers' Rights.

An analysis and understanding of farmers' different roles and responsibilities in PGR conservation and management, as well as the intrinsic value of their knowledge, is crucial to sustainable, effective, and socio-economically appropriate PGR conservation initiatives, and

to the provision of appropriate and targeted support. Efforts are required at all levels to develop and implement gender-responsive policies, programmes and actions for the conservation and sustainable use of plant genetic resources.³

2. Need for the Conservation of Biodiversity: The earth's biological resources are vital to humanity's economic and social development. As a result, there is a growing recognition that biological diversity is a global asset of tremendous value to present and future generations. At the same time, the threat to species and ecosystems has never been as great as it is today. Species extinction caused by human activities continues at an alarming rate;⁴ reduction of the earth's biodiversity as a result of human activities is a matter of great concern to prominent scientists.⁵ We are in the midst of the sixth era of extinction. This problem can be solved only by proper guidance, awareness, education, transfer of advance technology, research, conservation and sustainable use of biological diversity through the weapon of globalization only.

3. Meaning and Definition:

3.1 'Biological Diversity'

The term 'biological diversity' is commonly used to describe the number and variety of living organisms on the planet. 'Biological diversity' means the variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes the diversity within species, between species and of

ecosystem (Article 2 of the Convention on Biological Diversity, 1992).

The Earth is made up of ecosystems and ecological features which are supported by biodiversity; yet many people do not understand the meaning of biodiversity or what the impact of its loss would mean. In order to highlight the importance of biodiversity, 2010 has been selected as the *International Year of Biodiversity* in an attempt to educate people on biodiversity and how biodiversity supports everyday life.⁶

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3.2 'Sustainable Development':

The importance of maintaining the ecological balance and conservation of the resources has been increasingly becoming clear in the last two decades. It has now become necessary for all countries in the world to recognize this fact and plan what is known as 'sustainable development'. The United Nations World Commission of Environment and Development in 1987 has defined sustainable development as "a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development and the institutional change are in harmony and enhance both current and future generations to meet their needs."

3.3 Ecology:

The environment in which the man and other organisms live is called the biosphere. The biosphere is made up of different regions that have different types of flora (plants) and fauna (animals). The types of organisms in an area are determined by various factors such as the climate, temperature, rainfall, etc.⁸

3.4 Agriculture:

Agriculture may be defined as an integrated system of techniques to control the growth and harvesting of animal and vegetables. It is an uncomplicated endeavor comprising of technical and practical processes that helps in the maintenance of the ecological balance and protects human resources; and most importantly it is a viable food production system.

3.5 Farmer:

Farmer means any person who cultivates crop either by cultivating the land himself or cultivates crops by directly

supervising the cultivation of land through any person; or 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.⁹

4. What are Farmer's rights?

The new law recognizes the farmer not just as a cultivator but also as a conserver of the agricultural gene pool and a breeder who has bred several successful varieties.¹⁰

However, what are Farmers' Rights means "rights arising from the past, present and future contribution of farmers in conserving, improving and making available plant genetic resources, particularly those in the centres of origin/diversity." The purpose of these rights is stated to be "ensuring full benefits to farmers and supporting the continuation of their contributions."¹¹

The farmer's rights are intrinsically based on the link between innovation and rights over knowledge, biodiversity conservation, and the sustainable use of agro-biodiversity. The current patent regime recognizes the concern of developing countries on extending IPR protection to an area like agriculture. The Agreement on Trade Related Intellectual Property Rights (TRIPS) provides for a sui generis system to protect plant varieties, the result of a compromise between developed countries in favour of introducing intellectual property rights in agriculture and developing countries, which believe that agriculture cannot be equated to other fields of technology. In India, the Protection of Plant Varieties and Farmer's Rights Act recognizes that farmers, besides being innovators, play an important role in conserving biodiversity. The provisions in the Protection of Plant Varieties and Farmer's Rights Act, 2001 relating to farmer's rights are not so effective, because farmers are finding difficulty in registering their varieties even when they are entitled to it.¹²

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5. The Role of Farmers in Conservation and Preservation of Bio- diversity:

The knowledge of the indigenous people and the traditional farmers has made a significant contribution in the development of new crop types and biodiversity conservation.¹⁴

Agricultural biodiversity is the biodiversity associated with agricultural ecosystems and is known as the multitude of plants, animals and micro-organisms indispensable in sustaining key functions for food production. It is the outcome of the interactions among the environment, genetic resources and the agricultural practices. It yields direct and indirect use values: higher levels of agricultural biodiversity may generate reduced pest incidence, improved soil nutritional levels, crop pollination, and hydrological functions. Agricultural biodiversity also generates significant option values in conserving genetic resources that can be the basis for the development of new crop varieties and animal breeds. This includes biodiversity above and below the ground. Soil management practices as applied under conservation agriculture can significantly enhance soil life and below ground bio-diversity.¹⁵

Earlier farmers used to enjoy the practice of agriculture to feed the society without thinking it to be a burden on their shoulder. But now the whole situation has been changed because of following reasons, Agriculture is often attributed as gambling with Monsoon because of its almost exclusive dependency on Monsoons. The failure of these monsoons leading to series of droughts, lack of better prices, exploitation by Middlemen have been leading to series of suicides committed by farmers across India.¹⁶ Agro-industries sell their seeds which never sprout and fertilizers which barren the fertile lands. Farming community is facing a difficulty to overcome from these problems. However, even with all difficulties farmers began adopting improved methods and technologies in dairying, fisheries and livestock, and meeting the diversified food needs of India's growing population sustainably without harming the Biodiversity of the Country.¹⁷

6. Biodiversity and Farmers' Rights

Another dimension to the IPR issue is the differences among countries in their national wealth on biodiversity, particularly the agro-biodiversity. Many countries of the South, including India are hotspots of biodiversity. This has largely influenced the history and system of agriculture in

these countries, particularly the historic role of farmers in protecting, preserving and improving crop plants. It should not be forgotten that before the entry of organized and institutionalized scientific plant breeding, it was the farmer breeders who were responsible for creating the huge wealth of genetic variability in all crop plants and their wild relatives. They selected several varieties to address specific goals, different growing situations, and resistance to several pests and diseases.

In recognition of this fact, the FAO concluded that an international undertaking on farmers' rights arising from the past, present and future contributions of farmers in conserving, improving and making available plant genetic resources, particularly those at the centers of origin or diversity. These rights are vested with the international community, as the trustees for the present and future generations of farmers, for the purpose of ensuring full benefits to the farmers and supporting continuation of their contributions. One of the undertakings relevant to the present context is "to assist the farmers and farming communities in all regions of the world, but especially in the areas of origin/diversity of plant genetic resources, to participate fully in the benefits derived at present and in future, from the improved use of plant genetic resources through plant breeding and other scientific methods."¹⁸

7. Efforts for Conservation:

Maintaining bio-diversity means undoubtedly habitat conservation and restoration. In a wider this indicates protection against defragmentation, pollution, invasive alien species and climate change and it has made a huge impact on bio-diversity.¹⁹ Conservation and sustainable use of biological resources based on local knowledge system and practices are ingrained in Indian ethos and ways of life. Initiation of policies and programs for conservation and sustainable utilization of biological resources dates back to several decades. As a result, India has a strong network of institutions of mapping bio-diversity and undertaking taxonomic studies.²⁰

The fundamental condition for restoring bio-diversity are obvious, however the realization is more complex for example, as it mentioned above directly or indirectly globalization has an impact on the loss of bio-diversity, but you can neither cancel nor stop globalization in general there are lots of efforts on different sector to develop mechanism for conservation. Governmental Sector, Private economic sector and civil society plays a key role in conserving bio-diversity mainly through initiate standards, programs and conferences. It was the first time that bio-diversity was comprehensively address in a binding global treaty, the first time that genetic diversity was specifically

covered and the first time that the conservation was recognized as the common concern of mankind.²¹

8. The Privatization of Biodiversity and Biodiversity Related Knowledge:

The thrust of the western IPR regimes in the area of biodiversity is diametrically opposed to indigenous knowledge systems. Knowledge is considered to be the product of individual creativity, based on western scientific thought and systems of knowledge creation and gathering whereby the resource base is merely viewed as 'raw material'. In this paradigm IPRs represent the property rights to the products of mind, thereby resulting in knowledge and creativity being so narrowly defined that the creativity of nature and non-western knowledge systems have been ignored.

The two categories of IPRs that have a direct impact on the erosion of prior rights of communities are patents and plant breeders' rights. Plant breeders' rights negate the contribution of Third World farmers as breeders and hence undermine farmers' rights. Patents allow the usurpation of indigenous knowledge as a western invention through minor tinkering or trivial translation.

The development of patents on life forms is the result of legal developments in the U.S. and Europe. The U.S. Supreme Court decision in *Diamond v. Chakrabarty* opened the door of patenting microorganisms and was subsequently extended to genes, proteins, and through recombinant technology, to multi-cellular animals and plants. This blurring of distinction between inventions and discoveries by providing for the patenting of biological material is relevant to India where provisions relating to patenting of microorganisms in the Patent Act, 2005 have been referred to a Technical Expert Committee on Patent Issues. Though the traditional knowledge has not been perceived to fit into the western paradigm of science, it has contributed heavily to innovation in the intellectual property rights framework. The developing countries have begun to protect traditional knowledge against bio-piracy. It was the intervention of the Council for Scientific and Industrial Research (CSIR) that led to the revoking of the patent on the healing properties of turmeric granted in

the U.S. on the ground that the alleged invention was part of public domain knowledge in India.

8.1 Bio-safety

The patent system does not provide for any means of redress if a genetically modified organism released in the environment causes damage, the Canadian

Supreme Court has recently held that the mere presence of a genetically modified seed on the land of a farmer, even if he has not purchased the seed, constitutes an infringement of the patent on the seed.

9. Suggestions:

The bio- safety includes assessing health and socio-economic impacts of biotechnology, and that IPR need to be linked to sustainable development.

There are aspects to the intellectual property rights (IPR) regime that have not been debated seriously and extensively enough. It is difficult to envisage a situation in which the IPR regime can be done away with, developing countries should use the existing framework of IPR to ensure that the rights and livelihood of farmers, tribal peoples and marginalized communities

In countries like India, the government should enact laws to promote appropriate biotechnologies — genetic engineering that is environmentally safe and socially, economically and culturally acceptable.

10. Conclusion:

Preservation of the global environment is one more burning issue that a lot of people are concerned about. The thing is that this problem touches upon every single person. That is why this problem is an international one and almost all the countries are trying to take some measures to solve it.

The Legal Recognition of Farmers' Varieties and its Potential Role in Sustainable Agricultural Development and Conservation Strategies Improved returns to investments from conservation, which can be locally captured, are a necessary condition for environmental protection and the efficient coordination of national and international biodiversity conservation efforts. The extent to which existing legislations on plant variety protection can contribute to the conservation of agricultural biodiversity is an issue, which is being discussed in many countries facing the challenges of implementing Article 27.3 (b) of the TRIPs Agreement.

End Notes:

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