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Agro-Biodiversity Conservation for Sustainable Development : Provisions under PPV&FR Act, 2001

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t is estimated that globally nearly 2.5 billion people rely heavily on wild and traditionally cultivated plant species to meet their daily needs including employment and livelihood. In turn rural and tribal folk, both women and men, are the true repositories of traditional knowledge systems dealing with the characteristics of these species. Since the acceptance of agriculture by human beings as their basic source of livelihood, there is a continuum for the informal crop improvement by farm families and farming communities. Although unaware of the modern principles of plant breeding, the community improvement of the crop, based on selection of superior types which are resilient to different fluctuations in the climatic conditions and suited to the requirements of the local masses, occurred generation after generation. This led to the localized improvement of varieties and coupled with indigenous conservation practices these varieties were saved year after year.

During last 40 years, due to the positive impacts of the Green Revolution in India, the production of food grains and other crops has increased enormously. But, in view of the major projections of climate change and estimated rise in global mean temperature by 1.4-5.8 °C, it is expected that there will be changes in rainfall pattern, unexpected floods and droughts and above all there will be requirement of climate resilient varieties to cope-up with these changes. Since early seventies, several national and international discussions are in progress to deal with such phenomenon. Some relevant ones being, Stockhom Declaration in June, 1972 at UN Conference on the Human Environment, Brundtland Commission Report on "Our Common Future" in 1987 and the First Earth Summit at Rio de Janiero in 1992, which adopted several environmental conventions such as Biological Diversity (CBD), Climate Change, Ozone Depletion etc. In India, Environment Protection Act was enacted during 1986.

As a member of the World Trade Organization (WTO), India became signatory to the Trade Related Aspects of the Intellectual Property Systems (TRIPS), which provided under Article 27.3.b that the plant varieties are to be protected either by patents or by an effective sui generis system drawing its essence from UPOV. Based on these provisions, The Protection of Plant Varieties and Farmers' Rights Act, 2001 was enacted and the PPV&FR Rules were brought in force in 2003. Simultaneously, India being a party to Convention on Biological Diversity (1992), which recognizes the sovereign rights of States to use their own biological resources, and expects the parties to facilitate access to genetic resources by other parties subject to national legislation and on mutually agreed terms, it became necessary to enact Biological Diversity Act in 2002. Both these Acts aim to protect the Biological Wealth of India and to regulate the IPRs involved at any stage.

Agro-biodiversity hotspots and provisions under PPV&FR Act and Rules

Section 70(2) of the Rules framed under section 45 of the PPV&FR Act states that "The Gene Fund shall be applied for meeting the following purposes in accordance with the priority made hereunder:



- (a) to support and reward farmers, community of farmers, particularly the tribal and rural communities engaged in conservation, improvement and preservation of genetic resources of economic plants and their wild relatives, particularly in areas identified as agrobiodiversity hot spots;
- (b) for capacity building on *ex situ* conservation at the level of the local body, particularly in regions identified as agro-biodiversity hot spots and for supporting *in-situ* conservation."

The process of identification of agrobiodiversity hotspots of India

Based on the priority fixed under the Rule 70(2)(a), it became necessary to define and demarcate the areas which are to be identified as Agrobiodiversity hot-spots, before the support and rewards can be framed for farmers/ community of farmers. Thus, to identify the agro-biodiversity hotspots a Task Force ['Task Force 6/2007' constituted vide office order No. PPV&FRA/6-22/07/1310-1312 dated 8th October, 2007] under the Chairmanship of Dr. M. P. Navar, Former Director, Botanical Survey of India and Dr. K. Narayanan Nayar, Scientist E-1, National Botanical Research Institute, Lucknow with Dr. A. K. Singh, Principal Scientist and Head, Conservation Division, NBPGR, New Delhi as Member Secretary. The Task Force, after several rounds of discussions at different levels [including 02 National level Consultations held at NEH University, Shillong on 1-2 June, 2007 and at Annamalai University on 19-20 July, 2007], submitted its report which was published in the form of 02 Volume Book which have been widely distributed for creating awareness. The major recommendation of the Task Force was to identify 22 Agro-biodiversity hotspots distributed over 07 agro-geographical zones of India.

Some facts related to Agro-biodiversity of India

- India is one of the 12 mega-diversity countries of the world and is considered as a major centre of domestication of crop plants.
- Through millennia, India is known for its

civilizations and cultures and also for the confluence of human migrations attracted by the fertile Indo-gangetic plains. The ancient farming communities from time immemorial had grown and developed a rich cornucopia of crop plants through selection and adaptations.

- India has over 45000 species of plants and fungi, representing 11% of the world's flora.
- India is rich in endemic species representing 33% of its flora.
- ♦ There are three recognized hotspots of biodiversity in the Indian subcontinent, i.e. The Western Ghats & Sri Lanka, the Himalayas and Indo-Burma Region. There are 25 micro hotspots of flora.
- There are 16 forest types and 251 subtypes in India.
- At least 166 crop plants and about 320 species of wild relatives of cultivated plants originated in India. Within the spectrum of crop species and wild relatives, there are thousands of varieties, cultivars, landraces and ecotypes which occur in India.
- India is inhabited by about 550 tribal communities of 227 ethnic groups having 84.5 million people, which represent about 8% of the total population of the country.
- It is seen that large number of wild relatives of crop plants, primitive cultivars of cereals, millets, pseudo-millets, pulses and vegetables, which almost disappeared from their original habitat are found near tribal villages or backyard farms of tribal settlements.

PPV&FRA's plans for conservation of Agrobiodiversity of India

PPV&FR Authority organized several National level consultations on various aspects of agrobiodiversity conservation and based on these deliberations, the following steps are recommended to be taken-up to initiate/promote the conservation activities: National Conference on Biodiversity, Development and Poverty Alleviation 22nd May , 2010

- Creation/identification of active groups/ committees in the 22 different agro-biodiversity hotspots to promote farmers' variety registration.
- Promotion of awareness campaigns to create awareness about the provisions of the Act at grass root levels.
- Promotion of activities and development of schemes for assisting farmers for conserving and propagating their varieties.
- Organize a Network on Community Management of Agro-biodiversity. The aim is to bring together Government, University and NGO Organizations engaged in the revitalization of the *in situ* onfarm conservation traditions of tribal and rural

families and thereby convert agro-biodiversity hotspots in to happy spots. In such happy spots the aim is to promote bio-happiness through the conversion of bio-resources in to jobs and income on an environmentally sustainable basis.

- Initiating a Legal Literacy Programme on Entitlements in order to empower panchayat raj leaders and tribal and rural families on their entitlements under the Acts associated with agrobiodiversity.
- Development of complete database of the available and existing agro-biodiversity in the 22 hotspots.
- Registration of all possible extant varieties under different categories.

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