



Agrobiodiversity and Achieving the Zero Hunger Challenge

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Agrobiodiversity provides the basic building blocks for food, livelihood and health security. The Svalbard Gene Vault provides an opportunity for preserving, a representative sample of existing agrobiodiversity for posterity. We need more initiatives of this kind so that agrobiodiversity will be available at all times and for all.

The most urgent task today is the conservation of diversity and pluralism in all living organisms ranging from microbes to man. In particular, we need to promote gene banks for a warming planet. In this connection, the following three kinds of community gene banks developed by MS Swaminathan Research Foundation (MSSRF) are worthy of replication:

1. *Genetic garden of halophytes* – this is to preserve gene pools for breeding crop varieties tolerant to sea water in coastal areas, as a part of anticipatory research to face the challenge of sea level rise.
2. *Genetic garden of biofortified plants* – species like *Moringa*, sweet potato, etc. This is for helping to find agricultural remedies for prevailing nutritional maladies, in particular micronutrient deficiencies like vitamin A, vitamin B₁₂, zinc, iron, etc.
3. *Farm gene bank for the in situ conservation* – these will help agrobiodiversity relevant to promoting a climate smart agriculture.

The above three types of community gene banks may serve to illustrate the need and opportunities for conserving agrobiodiversity for launching an era of biohappiness. At the same time, there is need for greater emphasis on developing sustainable water security systems.

Malnutrition Burden

According to available data the malnutrition burden tends to be high in tribal areas. This is an enigma since such areas are rich in agrobiodiversity. An example is Attappadi, Kerala, where tribals are suffering from several nutritional deficiencies. An opportunity is now

available for converting this malnutrition hot-spot into a leader of the nutri-farm movement. The Government of Kerala has decided to distribute 1800 acres of fertile land to 1000 landless tribal families in Attappadi. Land confers multiple benefits such as food, work and income. The challenge now is to integrate nutrition with land use. These landless tribal families to whom land is being given can be trained to include in the farming system crops which will help to address specific nutritional disorders. The former Finance Minister Mr P Chidambaram had provided 200 crore in 2013-14 budget for establishing nutri-farms. Unfortunately this programme was not implemented. The Attappadi opportunity therefore should be taken to introduce specific agricultural remedies to overcome the nutritional maladies of the area. For example, *Moringa*, jackfruit, orange flesh sweet potato, amla, quality protein maize and many such crops can help to improve the nutritional status of the malnourished families. I therefore suggest that the distribution of land to the tribal families may be accompanied with assistance for converting a part of the land into a nutri-farm which will help to banish in a short time both protein and hidden hunger. Thus, Attappadi can become the flagship of the nutri-farm movement and erase its current image as a malnutrition hot-spot. I hope this unique opportunity will not be missed.

Culinary Diversity and Agrobiodiversity

Among the methods of protecting community knowledge and technologies under World Trade Organisation (WTO), Geographic Indication (GI) is an important one. UNESCO's World Heritage Site and FAO's Globally Important Agricultural Heritage System (GIAHS) are other forms of recognition of the conservation ethos of local communities. In this context, the Government of Paschim Bangla has done well in seeking GI protection for *Rasagulla* (Indian sweet). Odisha feels that it has also a claim on *Rasagulla* from the point of view of GI. There is need for according recognition to communities which have conserved agrobiodiversity, i.e., biodiversity

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used for various human needs. Such diversity can take the form of cultural, culinary and curative (i.e. medicinal plants) diversity. Thanks to the work of MSSRF, the agrobiodiversity based farming systems in the Koraput region of Odisha and the below sea level rice cultivation of Kuttanad in Kerala have both received GIAHS recognition from FAO. We should make similar efforts to get global recognition for the work of rural and tribal communities in areas of significance to human quality of life.

Nobel Prize in Medicine 2015: Importance of Conservation of Curative Agrobiodiversity

Dr Tu Youyou, China along with Dr Satoshi Omura and Dr William Campbell are the three medical professionals who have been chosen for this year's Nobel Prize in Medicine for discovering "therapies that have revolutionised the treatment of some of the

most devastating parasitic diseases". Dr Tu developed Artemisinin a drug that reduces the death rates from malaria. The interesting feature of this drug is its herbal origin. The sweet wormwood plant *Artemisia annua* was its main source. Dr Tu has been working on herbal medicines and I am happy that her work has led to a significant medical contribution. This emphasises the need for the conservation and study of medicinal plants belonging to the category of curative agrobiodiversity. AYUSH (Ayurveda, Yoga and Naturapathy, Unani, Siddha and Homoeopathy) in our country should help to intensify work in this field. I know several other drugs of herbal origin which are under advanced stages of testing including a drug for HIV/AIDS. More support for the conservation and scientific analyses of medicinal plants will be of great value in preparing drugs which are not only effective, but also economical and safe.