Strategy Paper

Implementing the International Treaty to Address Current Concerns about Managing our Plant Genetic Resources

by

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Implementing the International Treaty to Address Current Concerns about Managing the Plant Genetic Resources[1]

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The organization of planning workshops for strengthening national capacities to implement the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) is essential in order to promote the participation of countries in the multilateral system of access and benefit-sharing of the ITPGRFA, and to identify means to improve access to plant genetic resources. For the effective implementation of the multilateral system of access and benefit-sharing at country level, there are a number of core requirements to be fulfilled, according to the needs of each country. The time has come to move beyond just raising awareness about the ITPGRFA, and to develop a road map for its fast and effective implementation.

The institutionalized management of plant genetic resources for food and agriculture (PGRFA) can be viewed with respect to the period leading up to the Earth Summit held in Rio in 1992 (or, pre-summit), and that which followed it. Fortunately, I started learning about genetic resources when there were no such summits. During the pre-summit period,

[1] Inaugural address delivered in the workshop on 'Strategies for Implementing the International Treaty on Plant Genetic Resources for Food and Agriculture', held on 23 January 2012, at the National Bureau of Plant Genetic Resources (NBPGR), New Delhi.

as a student of genetics, I was taught three important things about genetic resources. First, that genetic resources are the building blocks for improving productivity using new genes in plant breeding. Second, that genetic resources are the common heritage of mankind – of course, we say 'humankind' now. Third, that genetic resources are to be freely exchanged for human welfare. Unfortunately, these principles hold no more since the global debate on conservation of biodiversity began in the early nineties.

The United Nations Conference on Environment and Development promoted a major paradigm shift in the management of genetic resources, subjecting them to the rights of nations, which required them to be protected with proper legal instruments. Furthermore, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources were enshrined in the Convention on Biological Diversity (CBD). The CBD, which was adopted in 1992, also envisioned that genetic resources were to be conserved for posterity[2]. Ten years later, during the World Summit for Sustainable Development (WSSD) in Johannesburg, it was realized that conservation is not only required for 'posterity' but also for 'use'. Hence, 'conservation through use' became a common buzz phrase. After several studies, we now know that there is relatively less use of genetic diversity today than before. The Food and Agriculture Organization of the United Nations (FAO), with support from the Bill and Melinda Gates Foundation, has begun a Global Initiative on Plant Breeding (GIPB) to build required capacity for enhanced use of genetic resources.

In the past, India had strong national breeding programmes, especially under the All India Coordinated Research Projects (AICRPs), on almost all crops for food and agriculture. Several improved varieties and hybrids were developed under these

[2]The text of the CBD is available at: http://www.cbd.int/convention/text/.

projects. Today, we seem to have become complacent and more dependent on the pre-breeding materials that are provided by many of the international centres/institutions.

The CBD relates to all forms of biodiversity. But, we are greatly concerned with agricultural commodities, including crops, which are immediately necessary for the food and nutritional security of humankind. Thus, a dialogue was initiated under the auspices of FAO to revise the International Undertaking on Plant Genetic Resources for Food and Agriculture[3]. The deliberations culminated in the development of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA)[4]. During this time, I was actively associated with a wide range of debates concerning farmers' rights and the revision of the ITPGRFA. At that time, there was a general consensus that only plant breeders should have rights, and even the definition of farmers' rights was not known. I chaired the FAO Working Group on Farmers' Rights, which took almost two years to arrive at a clear definition of farmers' rights. It was then realized that not only plant breeders but also farmers should have rights over their landraces and varieties.

Undoubtedly, all these developments have changed the way the genetic resources are being managed today. In the process, what has happened is that the free exchange of genetic resources has almost stopped. India was among the first countries to ratify the ITPGRFA in 2002. The ITPGRFA came into force in 2004, and in 2006 its governing body adopted the standard material transfer agreement (SMTA) as the instrument for carrying out multilateral germplasm exchange under the ITPGRFA. In India, we envisioned that there would be a bilateral system of germplasm exchange under the CBD, and multilateral exchange under the umbrella

[3]See: http://www.fao.org/Ag/cgrfa/iu.htm.

[4]The text of the ITPGRFA can be downloaded at: http://planttreaty.org/content/texts-treaty-official-versions.

of the ITPGRFA. Although the process has not been easy, and no doubt remains slow, still India has moved forward. The Government of India enacted the Protection of Plant Varieties and Farmers' Rights (PPV&FR) Act in 2001[5], to provide for the establishment of an effective system for the protection of plant varieties, the rights of farmers, plant breeders and researchers; and to encourage the development of new varieties of plants of economic importance. At the same time, the government addressed issues related to the Biodiversity Fund, and access and benefit-sharing mechanisms, by enacting the Biological Diversity Act (BDA), in 2002[6]. I would like to congratulate all those who were involved in these processes, because in many countries similar laws are yet to be formulated or passed by the respective parliaments.

I want to emphasize here that a lot of water has flown under the bridge. Prior to these international regimes and national laws, genetic resources were being exchanged for faster genetic enhancement. Our food basket today would have been entirely different had we not freely exchanged those genetic resources. There was a lot of debate during the negotiations of the ITPGRFA as to why soybean and some important vegetables should not be included in the Annex. I list of crops in the multilateral system of access and benefit-sharing, as they are important food crops. Somehow, these were excluded because of political rather than scientific considerations. Several other crops were also discussed, but not included due to the commercial interest of some countries. The decision about the Annex. I list of 64 crops (35 food crops and 29 forage species) was taken after intense debate on the last day of negotiations, with the understanding that countries would eventually come forward later and decide if

[5]The text of the PPV&FR Act is available at: http://agricoop.nic.in/PPV&FR%20Act,%202001.pdf.

[6]The text of the Biological Diversity Act is available at: http://nbaindia.org/content/25/19/1/act.html.

the list should be expanded. Unfortunately, no one is willing to debate and extend the list anymore.

Although the ITPGRFA was ratified almost ten years ago, we are still talking about raising awareness and developing strategies for its implementation! Countries like India, though previously forerunners in using and exchanging PGRFA, have not yet fully implemented multilateral access to those materials under the ITPGRFA that are currently under the domain of FAO and available in the collections of the CGIAR Consortium of International Agricultural Research Centres. A large amount of germplasm of Indian origin was acquired by international genebanks (including CGIAR genebanks) before CBD ratification (1993); this germplasm is being globally exchanged continuously through the ITPGRFA. It is paradoxical that India has yet to agree upon a mechanism under the ITPGRFA to implement the multilateral exchange of Annex. I crops, when most of our germplasm is already held in the global multilateral domain. There is a general opinion that India and many other countries are not very open to sharing their respective genetic resources under the obligations of the ITPGRFA. In spite of its great merits, the SMTA has not yet been accepted/ adopted by many countries, including India. To address these issues, the Asia-Pacific Association of Agricultural Research Institutions (APAARI), along with Bioversity International, has played a significant role in creating awareness about the enhanced use of genetic resources through multilateral exchange using the SMTA, or bilateral exchange systems based on a mutually agreed material transfer agreement. APAARI, Bioversity International, Rural Development Administration (RDA), the Republic of Korea and the Global Forum for Agricultural Research (GFAR) jointly organized an international symposium on 'Sustainable Agricultural Development and Use of Agrobiodiversity in the Asia-Pacific Region' at Suwon, Republic of Korea, from 13–15 October 2010, in which 84 experts from 32 countries participated.

The symposium unanimously adopted the 'Suwon Agrobiodiversity Framework', and provided an opportunity to review and redefine the role and directions of agricultural research and development for the conservation and use of agrobiodiversity, for inclusive agricultural growth and development. It became quite clear that the current situation calls for a better understanding and urgent implementation by the countries concerned, rather than merely raising awareness on the ITPGRFA.

In my opinion, for the general well being of humanity, the pre-CBD era was certainly better than post-CBD. As a result of sovereign rights of nations over their genetic resources in the post-CBD era, several legal and policy dimensions have been added to the handling of PGRFA. A Global Plan of Action (GPA) was adopted in 1996 and has 20 priority activities to address various aspects of the conservation and use of PGRFA[7]. The Second Report on the State of the World's Plant Genetic Resources for Food and Agriculture, in which I was also associated with two chapters, was published in 2010[8]. The report reviews and assesses the current situation of PGRFA, and reflects on the many interesting lessons that have been learned. A perusal of the report reveals that we need to make a great effort towards strengthening capacity-building and partnerships in order to fulfil our legal obligations; and we must refrain from putting more hurdles in the way of implementing our obligations under the ITPGRFA. In fact, with all these negotiations, we have ultimately made things even more difficult. The exchange of genetic resources, which was previously the domain of scientists, is now required to be carried out with the help of bureaucrats, legal experts and farming communities. Thus, in all these developments, issues and concerns need to be looked into more seriously, passionately

[7]See: http://www.globalplanofaction.org/.

[8]The full report may be downloaded at: http://www.fao.org/docrep/013/i1500e/i1500e00.htm.

and in the context of the rights of the beneficiaries, as well as expected benefits to society.

An often-raised question is 'what benefits can be obtained from access and benefit sharing laws?' In my view, access itself is important, and the ITPGRFA recognizes this in the multilateral system of access and benefit-sharing. Benefit-sharing has long been an unresolved issue. We have been having debates in India with the private seed sector organizations, and a general agreement was reached in which the organizations agreed to share approximately 5 per cent of the sale proceeds from public bred varieties and hybrids. Innovative models must be devised in this regard. Although, the seed industry in India has made great progress with the efforts of the public and private sectors, the private sector organizations have expressed concerns that they are not getting enough genetic resources for crop improvement. With the advent of plant breeders' rights, and the application of intellectual property rights (IPRs) in agriculture, there is a hesitation in sharing germplasm with the private Indian seed industry, for fear of loss of ownership and biopiracy. In fact, now we don't even want to share information on the availability of material, which is a matter of great concern. Hence, there is an urgent need to initiate a process to build trust amongst the various actors, and develop an appropriate mechanism to facilitate the sharing of germplasm between the private sector and the national system.

The farmers are the custodians of many traditional varieties and landraces. Currently, their rights are being protected through the PPV&FR Act. The PPV&FR Authority needs to be congratulated for recognizing farmers' rights, and for being a saviour of farmers' genetic resources. However, we need to see what benefits have gone to the farmers so far. A suitable mechanism must be developed so that farmers can directly benefit from the invaluable services they provide to humankind in protecting rich genetic resources in different hotspots and agro-ecological conditions.

The current state of affairs in the international arena is due to the fact that those who have not yet accepted and ratified the ITPGRFA are the most vocal people during debates in the international meetings. I had been taking part in these debates but, unfortunately, I find that very few technocrats take part in these debates. Mostly, those debating are either lawyers or bureaucrats. When I used to take part in the debate on farmers' rights, there were so many 'clauses' and 'sub-clauses' making things more complicated, and with less substance and clarity. Every time, it was an arduous task to get even one line cleared as there were more than ten legal experts sitting with the delegations of developed nations; whereas developing countries, from where most genetic resources come, were represented by only one person, and sometimes by no one at all.

The Nagoya Protocol on access to genetic resources and the fair and equitable sharing of benefits arising from their utilization, under the CBD, is open for ratification. India signed it on 11 May, 2011, and ratified it on 19 October, 2012. It is a matter of great concern that, on the one hand, the international protocols and treaties are signed by the countries, while on the other hand, their direct benefits do not reach the society. In order to harness the benefits of these protocols and treaties, a national strategy is urgently needed for the convergence and coordination of all relevant issues/legal requirements to make a step forward so that a targeted section of our society is benefitted.

The Biological Diversity Act (BDA) is broad, because it encompasses all forms of biodiversity available in nature, including agrobiodiversity. In India, the Department of Agriculture and Cooperation, of the Ministry of Agriculture, is the nodal agency for agrobiodiversity, while the technical aspects are handled by the Indian Council of Agricultural Research (ICAR), which is another wing of the Ministry of Agriculture. Often, ICAR is not invited to participate in these

international debates. The creation of many institutions with a lack of convergence and coordination between them also becomes a problem. Therefore, there is an urgent need for a coordinated effort at the national level, for which appropriate institutional mechanisms need to be put in place to make decisions through regular consultations involving all relevant organizations. ICAR recently formed a National Advisory Board on Management of Genetic Resources. The Advisory Board realized in its first meeting that there are many policy issues to be discussed, and in view of this it resolved to move forward with urgency and make several important decisions. It was decided that the Department of Agricultural Research and Education (DARE), in coordination with the National Biodiversity Authority, must take immediate steps towards providing access to the germplasm of crops listed in Annex. I under the multilateral system as per the provisions of the ITPGRFA. If that happens, this will amount to moving at least one step forward. It was also decided that information on genetic resources must be made available in the public domain for the purpose of openness in information sharing. The availability of information about the germplasm will not only be useful to share and enhance the utilization, but will also negate the belief that a genebank is merely a 'black box'. It is indeed extremely important for the researchers to know what is available in the genebanks, otherwise these will effectively remain black boxes and will not serve any other useful purpose. Information on all germplasm being held in the genebanks needs to be made available, and made accessible for use through required legal instruments so that it is judiciously used for the benefit of humankind.

Furthermore, there is also a need for the harmonization of different protocols/treaties. This would require better understanding, facilitated by the organization of in-depth discussions and national, regional and global debates from time to time. I congratulate Bioversity International for undertaking activities for awareness generation, with

funding support from the Dutch Government. I would like to emphasize that in order to generate awareness at all levels, all the stakeholders, including the researchers, breeders, policy makers, non-governmental organizations (NGOs) and farmers involved in conservation through use, be included in initiatives on capacity development. Unfortunately, even for the inaugural session of the national workshop entitled 'Strategies for implementing the multilateral system in India,' there were no policy makers from the Ministry of Agriculture in the audience, although they are the ones who take the policy decisions. Neither were there NGOs nor many farmers. In the absence of all relevant players, the deliberations and discussions of such important meetings will serve little purpose. If we really mean business, we should do something well planned and more tangible to address the issue of conservation and utilization of plant genetic resources, such as access and benefit-sharing.

I am a strong advocate of the concept of benefit-sharing, and in view of this, I have been urging the Chairman, PPV&FR Authority to garner government support for the creation of an Indian Gene Fund of around Rs. 50 crores (US$ 10 million), which seems to have been included in the 12th Five Year Plan. This fund is for helping farmers and farming communities. It is hoped that the scope of benefit-sharing will increase in the future and that the Gene Fund will expand. Private sector organizations and associations can also be approached to contribute to the Gene Fund. This will be the best step forward to show their solidarity with the national approach. Even the private sector is not sharing germplasm and is not willing to keep it in the National Genebank. This one-way process will not work, and hence, a conclusive dialogue with the private sector is very much needed.

There is an urgent need for partnerships amongst all stakeholders, including public and private sector, NGOs and farmers. Mr. Sunda Ram is a farmer who conserves a large

number of collections of different varieties and crops by sheer self-motivation, and without any formal support. The issue to worry about is that if funding support is not forthcoming, there will be no use for the Gene Fund, which was created after much consideration; if the people who conserve the precious germplasm, in the interest of the nation, are not encouraged through appropriate incentives and rewards, the tribal communities will not protect the genetic resources for the benefit of the rest of us while living at the subsistence level. These are issues and concerns that require serious deliberations and call for urgent action.

India is richly endowed with a wealth of genetic resources, which we used to nurture. We have been debating and making a good case for effective and rather urgent implementation of farmers' rights and benefit-sharing with local communities. This process has to be initiated without further delay. That is the way we built the national plan of action during the National Agricultural Technology Project (NATP). The national action plan was prepared in 1998 to be implemented in 'mission mode'. Under the plan, a national germplasm collection programme was launched. Prior to the collection programme being launched, we had 200,000 accessions in the National Genebank at the National Bureau of Plant Genetic Resources (NBPGR). Today, there are over 400,000 accessions, of which 200,000 were collected in just five years, under the NATP project. This was achieved through a participatory approach, by involving all stakeholders. However, this enormous wealth of germplasm must now be systematically characterized, evaluated and shared for effective use. An institute like the NBPGR cannot do this all alone, but it can be achieved through partnership mode, by having a national network programme on the collection, evaluation and supply of genetic resources.

I strongly urge that all the above issues and concerns be addressed jointly by all the stakeholders, especially those

working directly with plant genetic resources. Germplasm must be shared more freely in India through the multilateral system, under the ITPGRFA, using the SMTA. This could serve as a good example for the Asia-Pacific region. There are serious challenges before us. Hence, we need to put all our energy and actions together and have a clear road map before us so as to address both the national as well as international concerns more effectively for the benefit of humankind.

Finally, let me conclude by saying that time is running out; business as usual will not help. We need to think globally but act locally, by devising innovative ways to manage our rich genetic resources and serve the society with human face.

DR. R.S. PARODA

Dr. Rajendra S. Paroda is an accomplished plant breeder and geneticist by profession and an able research administrator. He has made significant contributions in the field of crop science research. He is known for modernization and strengthening the national agricultural research system (NARS) in India as well as in Central Asia and the Caucasus. He was instrumental in establishing the Asia-Pacific Association of Agricultural Research Institutions (APAARI) and the Asia-Pacific Seed Association (APSA), while serving with FAO in early ninties. Since, 1992, he is continuing as Executive Secretary of APAARI. He was elected as the first Chairman of the Global Forum on Agricultural Research (GFAR) and served from 1998-2001. Dr. Paroda was also the Director General, Indian Council of Agricultural Research (ICAR) & Secretary, Department of Agricultural Research and Education (DARE), Government of India during 1994-2001. He has the unique distinction of being the main architect of one of the world's largest and most modern National Gene Bank at NBPGR, New Delhi. He is Fellow of almost all the prestigious Science Academies in India and the Agricultural Academies of Russia, Georgia, Armenia and Tajikistan, besides that of Third World Academy of Sciences (TWAS), Italy. He had been the President of the National Academy of Agricultural Sciences (India) from 1996-2001 and was elected as General President of the prestigious Indian Science Congress Association for the year 2000-2001. In addition, he served as President of more than a dozen agricultural scientific societies in India. In recognition of his meritorious contributions to agricultural research, the President of India conferred on him the prestigious PADMA BHUSHAN in 1998. He also received several prestigious awards, namely, ICAR Team Research Award (1983-84), Rafi Ahmed Kidwai Memorial Prize (1982-83), Federation of Indian Chamber of Commerce and Industry (FICCI) Award (1988), Om Prakash Bhasin Award (1992), Asia-Pacific Seed Association Special Award (1995), Dr. Harbhajan Singh Memorial Award (2001), Dr. B.P. Pal Memorial Award (2003), Borlaug Award (2006) and Agriculture Leadership Award (2008), 1st Dr. A.B. Joshi Memorial Award (2012), Prof. Kannaiyan Memorial Award (2012), Medal from Govt. of Vietnam (2012), Krishi Siromani Samman by Mahindra (2013) and Vaigyanik Drishlikon Society (VDS) Samman (2013). In all, 15 Universities including Ohio State University, Indian Agricultural Research Institute, Scientific Council of Agricultural Academy, Agricultural Universities of Pantnagar, Kanpur, Jorhat, Coimbatore, Hyderabad, Udaipur, Varanasi, Srinagar, Meerut, Bhubneshwar, Punjab and Dharwad have conferred honory D.Sc. (Honoris Causa) degrees on him. Dr. Paroda has also served as a member of many international organizations such as Australian Center for International Agricultural Research (ACIAR), Commonwealth Agriculture Bureau International (CABI), Finance Committee of the Consultative Group on International Agricultural Research (CGIAR), Global Biotech Advisory Council of Monsanto, Board of Trustees of IRRI, Chairman of ICRISAT Board of Trustees and Chairman, Program Committee of GFAR. In view of his outstanding achievements, both American Society of Agronomy and the Crop Science Society of America had awarded Dr. Paroda with their prestigious Honorary Membership in 2001. ICRISAT and Kazakhstan have named their Gene Banks after him. He also served as a member of the World Meteorological Organization (WMO) High Level Taskforce for preparing a Global Framework for Climate Services. As Chairman of the Organizing Committee of Global Forum on Agricultural Research for Development (GCARD), he provided leadership at global level to organize successfully GCARD2 in October, 2012 in Uruguay. His passion, as Chairman, Trust for Advancement of Agricultural Sciences (TAAS), is to link science to society through needed policy reorientation and to work for the overall progress of the resource poor farmers. Since 2010, he has been serving as Chairman of the Farmers' Commission of Haryana State and as member of the Rajasthan State Planning Board. Currently, he is a member of the ICAR Society as well as its Governing Body.

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