

## **GENETIC RESOURCES; INTELLECTUAL PROPERTY RIGHTS AND THE RIGHTS OF LOCAL COMMUNITIES**

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The subject of Intellectual Property Rights (IPRs) on biological materials has become important in all kinds of bilateral and multilateral negotiations. The central issue is the fact that biotechnology will be the most dominant technology of the next twenty to thirty years. Bioresources which are the raw material of biotechnology are largely located in the developing countries. The industrial countries which are strong on technology have few bioresources. Forcing a harmonised IPR regime on developing countries through international negotiations is their way of gaining access to the bioresources they need to flourish in the field of biotechnology.

If companies with a stake in biotechnology procure the right to patent their products, whether they are plant based medicines, neem based pesticides or wound healing products derived from turmeric, in India, Nepal or Bhutan, and then they have in fact acquired guaranteed access to certain medicinal plants, neem and turmeric in these countries, for the duration of the patent. In this way, the multinational patent holder will be able to control bioresources in developing countries. This will be facilitated by the requirement that all signatories to conventions like GATT/ WTO and the Convention on Biological Diversity (CBD) must accept the patent / IPR laws determined by the industrial nations as the standard for these conventions.

Germplasm owning countries must be cautious about what kind of IPR regimes they accept. For these nations, genetic resources are not only the raw material of potential biotechnological applications; they are first and foremost, the socio-economic foundation of tribal and rural populations. Hill populations in countries like Nepal, India and Bhutan which are the custodians of valuable knowledge about their biological resources must not be hindered in their potential to commercialise this knowledge in the expanding era of biotechnology. The opportunity that tribal and rural people have to engage in self-reliant growth based on their own skills must not be jeopardised by the overwhelming financial capacity of multinational companies.

In this context it is of utmost importance that countries in our region, India, Nepal, Bangladesh, Pakistan, Bhutan and Sri Lanka work together to formulate a regional policy. This will strengthen our position as a germplasm rich centre and no one country will be able to undermine the larger interests of the region. Genetic resources do not recognise political boundaries and the countries in this region will have a similar distribution of bioresources. It should not be possible for one country to grant access to a particular germplasm if another country of the region has refused access to the same germplasm.

What needs to be done now is to understand the requirements of GATT/ TRIPs and CBD. These are currently the two most important international treaties dealing with the treatment of genetic resources and Intellectual Property regimes connected to them. Germplasm rich countries should formulate national legislation that will protect their interests to the maximum extent. This is possible if nations demonstrate political will in taking firm positions on what is

their most valuable natural resource. It is possible to draft strong national laws without really contravening internationally accepted conditionalities in the two treaties.

### **REQUIREMENTS OF GATT/ TRIPS.**

The Trade Related Intellectual Property Rights (TRIPs) regime of GATT requires member nations to provide patent protection for micro organisms and a sui generis system for plant varieties.

Our region should refuse to accept patents on micro organisms. We should offer to accept patents on the products derived from the micro organisms but not the organisms themselves. In order to do this, we can call upon the clause of 'ordre public' and morality. GATT/TRIPs has a provision that nations can refuse to bring under the purview of patents any product or process that offends the sense of morality of their societies or goes against the public order ordained in these societies. We can claim that accepting the ownership of any agency other than God, over living organisms offends our religious sensibility and our sense of morality. The Europeans have successfully invoked these ethics clauses in the European Parliament and succeeded in getting the right to patent life forms struck down.

We should agree to the institution of a sui generis system for protecting new plant varieties. However, our sui generis system should not be modelled on UPOV which is the European organisation whose name in French translates to Union for the Protection of New Plant Varieties. The UPOV model has been developed for industrial countries, not agricultural nations, like in our region. UPOV recognises the rights of the breeder and rewards it with the Plant Breeders Right (PBR). It does not recognise that the farmer has any rights and it has no provision for acknowledging and therefore rewarding any contribution that the farmer makes to the development of new plant varieties.

UPOV in its 1978 version grants two exemptions to the Breeders Right over the new variety. One is the Farmers Exemption which allowed farmers to save seed out of the harvest of the PBR protected seed for his next sowing. The second exemption known as the Breeders Exemption allows other breeders the right to use the PBR protected variety as breeding material for the development of other varieties. The revised version of the UPOV treaty which came into force in 1991 does away with both exemptions so that it is only the breeder who retains, almost monopoly rights over a new variety in the development of which other parties have contributed in a major way.

It needs to be remembered that farm women and men have not only created several thousand races of food and cash crops, they have also identified valuable genes and traits in these crops and maintained them over generations through a highly sophisticated system of crossing and selection. Communities have not only developed complex systems of pest management and biological control, they have identified and managed a series of genes conferring valuable traits for commercial and domestic needs. So it is that genes for traits as diverse as disease resistance, high salt tolerance, resistance to water logging and drought tolerance have been maintained in the repertoire of communities. Along with these commercial traits, characteristics like cooking time, taste, digestibility, milling and husking characteristics like how much grain breaks during milling operations are recognised and maintained. Women, who have been the traditional custodians of the seed and responsible for its selection, are the repositories of this knowledge and in the true sense owners of this complex seed technology and know-how.

This work of genetic selection, maintenance and cross breeding is the result of innovative and creative scientific experimentation in the field. This work is in no way less than the scientific experimentation conducted by scientists in the experimental plots of agricultural research stations. We need to overcome the bias that most of us suffer from, that of acknowledging the research conducted by scientists in white coats working in laboratories of universities as 'Science' and dismissing the complex knowledge systems contained in rustic, rural communities as something infinitely less and not worthy of acknowledgement.

The fact is that there would be no plant breeders in long white coats working on experimental farms if it were not for the prior knowledge gained from rural communities. Indigenous knowledge is not only the foundation of modern science in this and many other fields, it is also what could be described as the reference and referral centre for modern plant breeding. Today, faced with the threat of global warming and climate changes across agricultural zones, scientists are on the look out for crop varieties that are more heat tolerant. The scientists do not acquire information about the location of heat resistant wheat or millet varieties by sitting in their expensively appointed laboratories and meditating for guidance. They acquire this information by going to deserts and hot regions and asking local farming communities about the varieties that grow in that region and that can withstand extreme heat. Armed with the benefit of indigenous knowledge, these scientists return to their labs and their experimental farms and engage in a breeding and selection program that will result in the combination of traits that they seek to achieve in the new variety that is to be designed for post global warming agriculture.

If credit had to be apportioned for the breeding of a new crop variety, then it could be shared perhaps as 80:20 or at least 70:30 between the farming and scientific communities. One could say quite easily that if the breeding of a crop variety entailed 100 steps, then indigenous knowledge contributed the first 70 or 80 steps and laboratory science contributed the next 30 or 20 steps. It stands to reason therefore that credit, reward and recognition for a new variety should be similarly shared. That is the reason why the claim to place Farmers Rights on par with Breeders Rights is such a natural claim. Farmers have a greater and more innovative share in the creation of new plant varieties than scientists. Their contribution must be recognised with at least the same degree of enthusiasm, if not more than that accorded to scientists.

In Europe and USA where UPOV operates, farmers constitute no more than 2 to 7 % of the population. In our countries, they constitute more than 70% of the population. In UPOV nations, farmers are rich and get huge subsidies to keep their fields fallow in order to keep down the volume of surplus food produced. In our countries, a large percentage of the farming community has small land holdings and even practice subsistence agriculture.

UPOV nations have ensured their food security several times over. Our region still has to struggle to achieve food security. In the countries of the west not only is the agricultural profile different, the research to develop new varieties and production of seed is also very differently conducted. In India and its neighbouring countries, agriculture research is conducted by scientists in universities and public institutions. This research is financed by the tax payer's money and public grants. This research exists in the public domain. In UPOV nations on the other hand, most of the research needed to produce new varieties is conducted by private companies. This privately funded research belongs to the company and is not in the public domain.

Seed production in UPOV nations is similarly the exclusive domain of the company that has developed the new variety. It is the only agency that can produce and market the seeds of the new variety. That in fact is exactly the right conferred by the Plant Breeders Rights granted to individual breeders or the company under the UPOV system. In India, seed production and sale is largely in the hands of farmers. Although the National and State Seeds Corporations had been envisioned for this task, it is much more efficiently performed by the farmers themselves. Today, out of a total annual requirement of over 60 lakh tons of seed in India, farmers provide over 82%.

Clearly, the compulsions and needs of UPOV nations are vastly different to the needs of the nations in our region. Having established this, we need to specify the components that should go into the sui generis system that we give ourselves.

Our system should place Farmers Rights on par with Breeders Rights. Our regional policy should clearly make the grant of Breeders Rights reciprocal to the grant of Farmers Rights.

We should affix a fee for the use of germplasm from the region. So if disease resistant genes are used for vegetables or drought resistant genes used for cereals, then breeders and seed companies must pay for the use of these genes. No distinction should be made between foreign and local seed companies. Anyone using the germplasm which has been maintained by communities (and this includes the germplasm collected from farmers fields and now banked in the CGIAR system), should have to pay into a Community Gene Fund. This Fund can be maintained at the regional level as a Regional Gene Fund. Money obtained from Farmers Rights, from the fee for gene use or for the use of indigenous knowledge about certain kinds of germplasm like medicinal plants should be paid into the Regional Gene Fund. This money can be used for the conservation of the region's genetic resources but also for other needs that the community may have, like a primary school or health care centre.

It is often said that it is difficult to compute the fee that can be charged for gene use. This is not true. There are several indices which can serve as the baseline from which to compute the value of genes. For instance, the US department of Agriculture once put out a figure that germplasm import had benefited American agriculture to the tune of 70 billion dollars. Since the genes and their countries of origin are documented in such cases, it should not be difficult to calculate what was owed to which country for the use of its genes. Similarly, some years ago, the California musk melon crop was threatened by a fungal rot. Scientists brought in disease resistant genes from India and saved the California musk melon industry worth millions of dollars. Some percentage of the profits made by California from the import of resistant musk melon genes can be the fee payable for the use of the resistant genes.

## **REQUIREMENTS OF THE CONVENTION ON BIOLOGICAL DIVERSITY (CBD)**

The Convention on Biological Diversity rectifies a historical wrong. It reverses the principle of Common Heritage of Mankind according to which the genetic resources of the world belonged to everyone and not particularly to the nations where they were found. Now CBD has acknowledged the **principle of ownership** according to which genetic resources are recognised to be the property of those nations in whose sovereign territories they are located. In addition, CBD lays down two other conditions of great importance to germplasm owning countries. These are that of **Prior Informed Consent** and **Material and Information Transfer Agreements** with respect to the transfer of genetic resources from owner countries to countries/ companies / individuals that want to use these resources.

The clause of Prior Informed Consent lays down that parties wanting to use genetic resources must first take the permission of the relevant authority in the owner country. Material and Information Transfer Agreements are to govern the conditions under which these resources will be transferred to the user party. These conditions could for instance lay down the fee that will be levied for bioprospecting whether or not a product is developed, the basis of profit sharing from products developed, whether such products can be brought under the purview of IPRs or not, royalties payable to individuals or communities for the use of indigenous knowledge etc.

Although the Biodiversity Convention was ratified in December 1993, our countries have yet to formulate laws which will allow the conditions of the CBD to come into force. We must pass these laws immediately as domestic legislation that will allow us to protect our biodiversity and indigenous knowledge from marauding corporate giants who can take advantage of the legal limbo and transfer out genetic material without proper agreements. Today even when foreign nationals are apprehended at airports carrying genetic material like seeds, soil samples carrying micro organisms or butterflies and insects in their suitcases, it is difficult to proceed against them if the samples are not on the endangered or prohibited list. Unless ownership rights are established over genetic resources, they remain the Common Heritage of Mankind and their transfer cannot be considered illegal.

A new law has to be put in place following the CBD. This will have to have three essential components.. These are (i) to establish ownership rights over the biological resources found in the sovereign territories of each of the countries of the region. (ii) To formulate the guidelines and structures for Prior Informed Consent according to which user parties will have to seek the permission of some kind of National Authority authorised to grant or refuse access to genetic resources. Representatives of communities that have been responsible for maintaining genetic resources over generations and are the repositories of indigenous knowledge, should be members of such a National Authority. (iii) The conditions for Material and Information Transfer Agreements will have to be laid down and a formula of benefit sharing worked out so that the use of biological resources is just, equitable and sustainable. This law would seek to ensure that indigenous communities are not denied their share of the profits that accrue from the commercial exploitation of the genetic resources that they have conserved.

The question of Intellectual Property Rights will have to be addressed in the CBD, although indirectly. Our position should be that India will not grant IPR protection over products and processes derived from indigenous knowledge. The rationale for this is that knowledge that belongs to communities should not be privatised. Whereas this knowledge can and should be used for commercial exploitation and the betterment of communities, it should not be monopolised.