

NATIONAL POLICY NEEDED ON MEDICINAL PLANTS

Dr. Suman Sahai
Gene Campaign

When the campaign against the GATT dictated regime to introduce Intellectual Property Rights (IPR) on biological material was started, it used the seed as the symbol of what was under threat. We at Gene Campaign chose to base the campaign on the farmers' seed since this is the most easily identifiable symbol of our genetic resources. This symbol had the distinctive advantage of being emotive enough to get people to pay attention to the strange, new developments in agriculture and to arouse sufficient alarm for them to want to do something about it. We were certain that a similar campaign could not have been successfully launched using micro organisms, important as they are, as the symbol of the nation's genetic resources under threat. Bacteria and virus are simply not 'real' enough to the average person to engage the kind of attention needed to mobilise opinion in a campaign.

Now that a reasonable level of awareness has been generated about the kind of IPR regime that the GATT/ TRIPs has heaped upon us, it is time to pay attention to detail. We need to define our positions on other valuable biological resources like microorganisms and medicinal plants which along with seeds will be in the frontline of IPR claims. The recent discovery of the American patent on the healing properties of Haldi are an indication of things to come. Whereas our options may be limited regarding our course of action regarding what the Americans decide to patent in America, they are certainly not limited when it comes to deciding what we will allow in India. As countries like Argentina and Brazil among others show us, it is post-GATT domestic legislations that are determining the kind of IPR regimes that nations are actually adopting. There is no reason why India should not draft legislation that will ensure protection for its domestic sectors, specially in highly vulnerable areas like food and health care

Medicinal plants are the target of the international drug and cosmetic industry for two important reasons. The first is the growing alarm in western societies at the rising incidence of allergies to drugs indicating intolerance to chemically derived medicines. This along with the complications arising from side effects after prolonged drug use in chronic illnesses, has prompted the search for other healing methods and has led to a growing acceptance of other branches of medicine in western nations. All this is bunched together under the head Alternative Medicine.

The other reason that the international pharmaceutical industry is looking at indigenous healing traditions as drug sources, is the mammoth cost of research and development associated with the discovery and release of new drugs. The cost coupled with the fact that it can take years to finally get the drug tested, cleared and released has led to a search for alternate routes to drug synthesis. A research branch gaining increasing popularity in the pharmaceutical sector is the area of hemisynthesis. Hemisynthesis deals with research on existing molecules where half the synthesis is already done and only the other half remains to be done in order to get the drug molecule ready. The most lucrative source of promising molecules with medicinal value are the extracts of plants known for specific healing properties in the various traditions of indigenous medicine. Therefore the big pharma people are targetting the medicinal plants of countries where local healing traditions have already identified the plant and its uses. Once identified, the active principles can be tailored and manipulated to suit the requirements of the international drug trade.

This tailoring could be anything from changing the chemical composition of the molecule by knocking off a carbon or adding a nitrogen, to increasing shelf life or putting it into more accessible forms like capsules or tablets.

Since indigenous medical traditions whether Chinese or Indian, have already identified the use of medicinal plants in particular ailments, half the work is already done by nature and local communities. and the pharma industry needs to do only the other half. In the Indian systems of medicine like Ayurveda and Unani it is known for example that *Phyllanthus niruri* has curative properties for liver disorder or that turmeric has wound healing properties. Once this is known, the next step, that is making capsules, syrups and tablets out of the plant extract is child's play. The knowledge about the healing properties of plants resides with local communities or local individuals like vaidas and hakims .

The importance of indigenous knowledge in the realm of medicinal plants is obvious. Knowledge about the characteristics of a particular plant and its properties as a healing substance ,or stated differently, the technology of its use , is what gives medicinal plants their social and economic value. This technology of use has been acquired through a few thousand years of experience, trial and error and incremental refinement . As a result of this , communities have developed the knowledge of the plant, animal and mineral world to a mature and scientifically sound technology which exists in several forms, the best known of which is perhaps Ayurveda. Apart from Ayurveda, knowledge of the healing properties of plants is found in communities that live around the forest or close to nature. Tribal communities, island communities and others have developed their own knowledge base about the flora, fauna and mineral wealth of their region and use this knowledge to their socio-economic advantage.

It stands to reason that the technology pertaining to the medicinal uses of plants and animals belongs to indigenous communities and must be considered their property. It must be considered to be their property in the same way that a technology for making high grade chrome steel is considered the property of the Japanese company that developed it. It stands equally to reason that when someone wants to use indigenous technology to produce medicines from medicinal plants, they must first ask for permission and then agree on terms of payment for the use of this technology. When a company like Dabur or Baidyanath commercialises community knowledge and benefits financially from it, it should certainly pay royalty or make an arrangement for profit sharing. This would be even more the case if foreign companies wanted the use of this technology.

If a pharmaceutical giant like Merck were to show interest in the production of medicines based on Ayurvedic or tribal knowledge, it would explore the forest wealth of regions like India and Costa Rica via the local vaidas or shamans. The scientist from Merck cannot make head or tail of medicinal flora when he is bioprospecting, if he does not have information from the vaid or the tribal ojha. Merck will begin to look for a cure for stomach ulcers in plants that local vaidas use for stomach ailments that resemble the allopathic definition of ulcers., and not in plants that they use for ailments of the eye. The scientist from Merck could not enter a tropical forest on his own and choose random plants, saying for example, the creeper with blue flowers could yield drugs against cancer or the shrub with yellow flowers could contain ingredients effective against diabetes. The plants in the forest or in the field, or for that matter along the banks of rivers or on the roadside, have value only because people have the special knowledge about their characteristics and the range of their utility. It is clear that Merck must pay for this technological know-how.

It stands unequivocally established that biological resources have a value only when accompanied by the technology of their use . It is equally clear that bioprospecting as an activity is only possible when indigenous technology is made available to those seeking access to biological resources for commercial use. Now that bioresources are becoming a highly sought after raw material in the era of biotechnology. We must create a framework for the just and proper use and appropriate payment for indigenous technology. At present the awareness and acceptance in India is inadequate with respect to the recognition of indigenous knowledge as valuable technology with a high price.

We need to address ourselves to a few important aspects in order to lay down a comprehensive national policy in this regard. These can be listed as follows.

1. **Documentation of the location of biological resources at the regional and national level.**

Unfortunately, this task entrusted to the Botanical and Zoological Survey of India (BSI and ZSI) has met with less than dazzling success. It could be said that BSI and ZSI are reasonably clueless about the current state of India's flora and fauna. This must be rectified immediately if we are to use our bioresource as the foundation for national growth. We must at least know where we have what, whether previously recorded populations of plant, animals and insects are healthy, threatened, on the verge of extinction or already extinct.

Along with the documentation of the bioresources, we must **document the local/ community knowledge** that exists about the various uses of these resources. This documentation which should be compiled as a **National Bioresource Register** will serve several functions.

- a. The first is that of a data bank for people seeking access to information. This access should be made available for a fee accompanied by the conditions governing the use of this information. This is the normal practice with data banks every where.

The fee for bioprospecting must be levied and be paid into a **Community Gene / Technology Fund** in the dispensation of which, representatives of communities will have a say. It would be advisable to have a basic fee for the right to prospect irrespective of whether a viable product emerges from this exploration. A profit sharing formula should be worked out in addition, if a commercial product is developed, to pay for the use of Indian raw material and Indian / Indigenous technology.

- b. The documentation can be used to stake the claim of communities or individuals for royalty payments for the transfer of indigenous technology. This data base can also be used to identify communities which should be included in the National Authority that will govern the use of bioresources and implement conditions of the Convention on Biological Diversity (CBD) like Prior Informed Consent and Material/ Information Transfer Agreements.

- c. Finally, this data bank will serve the important function of establishing community knowledge firmly in the public domain. This will provide the technical basis for rejecting patent claims that derive from indigenous knowledge. The recent furore over the American patent granted on the wound healing properties of Haldi is a case in point. As is also the patent granted to WR Grace for a Neem based pesticide. *Phyllanthus nirurii*, called Bhoomi Amla in India is known in several Asian countries for its efficacy in treating liver ailments. A liver medication extracted from *Phyllanthus* has been patented by Bloomberg (USA), obviously derived from the traditional knowledge of Indian/ Asian communities. All these patents should have been challenged on the grounds that they derived from knowledge/ technology owned by indigenous communities. Furthermore, this knowledge was used unlawfully without either Prior Informed Consent or Material / Information Transfer Agreements, therefore a strong case exists for annulling these patents.

If India is to protect its interests, and the interests of its indigenous communities, it will have to be aggressive and proactive in laying down the guidelines governing the use of bioresources. It will then have to act resolutely to challenge any infringements. Apart from challenging the grant of patents in other countries, it would be advisable for Indian legislation to include clauses barring the grant of patents on any products or processes derived from indigenous knowledge. The knowledge of communities must remain in communities and not be privatised.

d. We must ensure that the information that is documented is banked in a government owned repository and is legally admissible in a court of law as evidence for prior knowledge. In order to strengthen the claim of indigenous communities over their knowledge base, our laws must admit Oral Tradition as documentation of use. This will be of importance when dealing with knowledge other than that documented in Ayurveda, like tribal knowledge or the knowledge existing in far flung island or hill populations.

2. **Drafting of national legislation.** New laws should be drafted quickly to deal with all aspects of bioresources and policy governing their use. These laws are to be drafted primarily in the context of two international treaties, the **Convention on Biological Diversity (CBD)** signed in Rio in 1992 and the **GATT/ TRIPs** which was finalised in 1994 and led to the formation of its successor the World Trade Organisation (WTO).

Three new laws have to be formulated for the CBD . These are (i) to establish ownership rights over the biological resources found in the sovereign territory of India. This is necessary to overturn the earlier principle of Common Heritage of Mankind according to which all genetic resources were considered to be the property of everybody, with no particular ownership. (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 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.