

# PROTECTION OF INDIGENOUS KNOWLEDGE: THE INDIAN EXPERIENCE

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## **Protection by the Constitution of India**

In India, special rights of Adivasis (tribals) include the Scheduled Areas, according to which tribal land can not be sold to non-tribals and only tribals can be agents of development. The Affirmative Action policy, guaranteed constitutionally, ensures reservations in education, employment and political representation by reserving political constituencies. A third protection is by Special Provisions (as in the case of Nagaland) where tribal dominated states have been given constitutionally guaranteed rights, (Article 371). Apart from land ownership, these rights include rights over all natural resources including forests. Although not brutalized like their New World counterparts, tribal societies in India and Asia have been often exploited. The rights that were given to them by post-colonial, independent governments are being eroded by domestic industry as also the forces of globalisation.

## **Conservation of biodiversity**

Tribal populations have created and maintained the Sacred Groves in forest areas. These are found all over India in the tribal zones. Mostly, they represent the only surviving examples of climax vegetation. Such virgin forests are usually located at the origins of forest water springs and in the catchment areas of river basins. A Sacred Grove is usually dedicated to a deity or a 'mother goddess' who is supposed to protect and preside over the Grove. It is believed that such Sacred Groves date back to several thousand years. The degree of sanctity of these sacred forests varies. In some forests even the dry foliage and fallen fruits can not be touched. In others, the deadwood may be picked up, but never the live trees or their branches. The animals and the birds are not disturbed. The Garo and Khasi tribes of North-Eastern India completely prohibit any human interference in their sacred groves. The Gonds of Central India, prohibit the cutting of a tree but allow fallen branches to be used.

The sacred groves of ancient times have become, in many cases, the 'Biosphere Reserves' of today and are found in several parts of India. The States with large tribal populations have the highest number of biosphere reserves in the form of Wild Life Sanctuaries and National Parks.

**Contribution of tribal knowledge to the development of Indian Systems of Medicine (ISM).** The ancient literature of India records that old communities have been using several kinds of medicinal plants for combating disease. The ancient Indians used the 'Snake root plant' (*Rauwolfia serpentina*) about 3000 years ago to treat several

diseases from mental disorders to 'insomnia' and 'snake bite'. They also used the poppy juice (*Papaver somniferum*) to relieve pain and anxiety.

Tribal healers use medicinal plants for a wide variety of diseases , ranging from rheumatism, paralysis, epilepsy, dropsy, leprosy, jaundice, diabetes and malaria to syphilis, gonorrhoea, chronic constipation, dysentery and diarrhoea . They also treat various skin diseases, women's ailments and bone fractures.

Several of the medicinal plants which were being used by the tribal people of India for centuries, have found wide acceptance and application in other systems of Indian medicine e.g. Ayurveda, Siddha & Unani, and even in modern medicine. Western style allopathic medicine has usurped several of these medicinal plants used by the tribals after chemical investigation revealed active ingredients with interesting biological activity.

### **Integration of ISM into the official health care system**

The Indian Systems of Medicine (ISM) have a place in the official Indian health care system. Doctors trained in Ayurveda, Siddha and Unani are part of the formal system. The government of India has recently created a Department of Indian Systems of Medicine (ISM) in the Ministry of Health to oversee policy and research in this area. India has over the years set up National Institutes of Homeopathy and Ayurveda. Similar institutions exist for Unani and Siddha traditions of medicine based on indigenous knowledge. There are colleges teaching ISM and training doctors all over the country. The ISM tradition is stronger in south India where it is preferred option for many people.

India has an old and well established chain of companies who only produce drugs and toiletries based on indigenous knowledge. Large, well known companies include Himalayan Drugs, Dabur, Baidyanath, Hamdard and several hundred large and small companies which function as an association called the Ayurvedic Drug Manufacturers Association (ADMA). For example, hair oils and shampoos containing ' Bhringraja' (known for preventing graying ), Shikakai and Amla as prescribed in Ayurveda, are sold regularly . The list is endless. Pharmacies sell ISM medicines in every city of India. In villages, people have access to the ISM healers and mostly also to the medicines marketed by ADMA companies.

In India the health care based on indigenous systems of knowledge is a regular feature for over 75 % Indians. The rest who are linked to the western style allopathic systems also resort to age old home cures or a prescription from an Indian healer like 'vaid' or 'hakim'. This system of knowledge has never been lost from India, enjoying a continuous existence for a few thousand years. The Indian does not see ISM as an 'other' or 'alternative' system of medicine.

### **Documentation of indigenous knowledge**

There is substantial work going on in India to document indigenous knowledge. This work being conducted by NGOs is often supported by the government.

1.Preparation of village-wise Community Biodiversity Registers (CBRS) for documenting all knowledge, innovations and practices has been undertaken in a few States. The State Plan for Kerala has also actively promoted documentation of local knowledge regarding biodiversity in people's biodiversity registers. One pilot project on this has been completed in Ernakulam District. The Tropical Botanic Garden and Research Institute (TBGRI) and the Kerala Forest Research Institute have initiated two other projects at a single Panchayat level.

In the state of Karnataka, there is an NGO initiative to formulate Peoples' Biodiversity Registers (PBRs). Some experts who were part of the State Planning Board recommended the Karnataka Biodiversity Conservation Order in 1996. This order envisaged biodiversity boards at the state and sub-state levels, with a wide range of stakeholders being members of the board, and envisaged PBRs as part of the responsibilities of the boards. One of the organised and widespread attempts of NGOs has been towards initiating and completing biodiversity registers. Many other organisations have since taken up the initiative, and at present about 5 villages each in Karnataka, Andhra Pradesh and the rest of India are involved in developing Peoples Biodiversity Registers

In addition there is the work being done by Centre for Ecological Sciences, Indian Institute of Science, and the FRLHT ( Foundation for the Revitalisation of Local Health Traditions, Bangalore to prepare Community Biodiversity Registers.

Strong NGO initiatives include

- ❑ Sristi, the Society for Research and Initiatives for Sustainable Technologies and Institutions based in Ahmedabad has been involved in documenting innovation relating to farming , developed by individuals at the village level. The HoneyBee Network, as the initiative is called, documents not elements of biodiversity per se, but their uses and in particular innovation surrounding these elements.
- ❑ The Beej Bachao Aandolan in collaboration with the villagers of Jardhar of the Terhi Garhwal district of Uttar Pradesh, initiated an exercise in 1995 to document the various bio-resources used by the community and conservation practices. The members of the Beej Bachao Aandolan - a network of local farmers have been involved for a number of years now in reviving and spreading indigenous crop diversity.
- ❑ the Biodiversity Conservation Prioritization program (BCPP), supported by the Biodiversity Support Program of the US, studied 56 sites across seven states, to develop a conservation strategy for areas rich in biodiversity across all major ecosystems
- ❑ Gene Campaign has undertaken work on documentation of indigenous knowledge among the tribal populations of the Mundas and Oraons of Jharkhand ; the Bhils of Madhya Pradesh; and the Tharus of the Terai region. Medicinal

plants and knowledge of its use for human and veterinary care was documented with the help of educated tribal youth. Elders in the village, medical practitioners and traditional healers were consulted in the collection and understanding of the information.

- The documented knowledge has been made into manuals for the tribal people who now use it as a practical healing guide. During the data collection exercise Gene Campaign also conducted a public education program, telling the community about the new national and international developments and the growing biopiracy which steals their knowledge and their materials. Gene Campaign has made them aware of their rights so that the people are now fully aware that this knowledge belongs to them and can not be used without their permission, even by the government of India.
- Gene Campaign has also been working to conserve traditional knowledge by its field projects which include :
  - i. Collection of local medicinal flora and establishing a herbal garden in Jharkhand
  - ii. Establishment of a medicinal plant project in Jhabua, M.P.
  - iii. Developing a Genetic Diversity Centre in Kishanpuri, M.P.
  - iv. Collection of landraces and traditional varieties of rice, millets and pulses and setting-up of medium term gene banks in UP and Bihar.
  - v. Survey and mapping of wild relatives of important crop plants in the Upper Western Ghats.
  - vi. Study on Agrobiodiversity and farmer perceptions about genetic diversity in the states of Uttar Pradesh and Bihar.
  - vii. Inventorisation of genetic diversity in Indian trees and their known characteristics

### **Setting up an Indigenous Knowledge Database**

Instances of biopiracy from India and other parts of the world have been snowballing in recent years. To prevent such instances in future, India has decided to develop digital databases of prior art related to medicinal plants which are already in the public domain. It is proposed to make this digital database available to Patent Offices all over the world so that they can examine and search for prevalent use/prior art of the particular medicinal plant. This should hopefully prevent granting of wrong patents like those on turmeric and Neem derived products. The compilation of the Traditional Knowledge Digital Library (TKDL) has been undertaken by the Department of ISM, Ministry of Health where over 30 plants have been recorded and more are being added. Plants that are not in the public domain and knowledge of whose uses is to be protected, are not put into the database.

Documentation of traditional knowledge is one means of giving recognition to knowledge holders. But mere documentation will not facilitate sharing of benefits arising out of the use of such knowledge, unless it is backed by some kind of mechanism for protecting the knowledge and reaching an international understanding.

## **National Legislation**

India has had a proactive approach to drafting national legislation pertaining to bioresources and indigenous knowledge.

- i) The Act on Geographical Indication to protect traditional Indian products like Basmati rice and Darjeeling tea. The process of compiling the list of products for which India will seek Geographically Indicated rights is still on.
- ii) The Plant Variety Protection and farmers Rights Act, 2001 . This is the sui generis legislation drafted to fulfil the conditions of the TRIPs/WTO. India has decided to include Farmers Rights in its legislation apart from the mandatory Breeders Rights that the TRIPS demands. The Farmers Rights include the right to save seed for themselves and the right to sell seed, even of the protected variety, but without branding. To protect the knowledge of farmers and enable a share of benefits to be derived from new varieties, there are provisions for a National gene Fund into which breeders will have to pay revenues for using farmer varieties. The legislation requires full disclosure of source and origin of varieties and complete passport data from breeders .Penalty for non-disclosure is a heavy fine and /or a jail term.
- iii) The National Biodiversity draft Act . In accordance with the CBD, this draft Act establishes sovereignty and recognises the rights of communities. There is a National Biodiversity Authority (NBA), as also State and Panchayat level Biodiversity Authorities in which the creators and holders of knowledge are members , so that they are fully involved in policy formulation. The draft Act controls use of biological resources specifically, making the distinction between traditional healers and companies . Information and data from research can not be transferred without the approval of the NBA. The NBA will screen any applications for intellectual property rights claims and monitor conservation.
- iv) The Patent Amendment Act, 1999. The Patent First Amendment Act has provided an exclusion for drugs based on ISM, keeping them out of the purview of the patent system.

## **Protecting the intellectual property of communities at the national level**

There is a lot of debate on the systems of protection that can be adopted to provide legal protection to the intellectual property of indigenous people and communities. Most of these discussions have tried to adapt the existing forms of IPRs like patents, trade secrets, copyrights etc. to the field of IK and bioresources. This is not going to work because of the inherent mismatch between the protection that was created for finite, inanimate objects coming out of industrial activity and the flowing, mutable and variable properties of biological materials .

How can a patent, with its life of 20 years be applied to an intellectual property that has existed for a few hundred if not a few thousand years ! Case law in India has shown that Copyrights are not adequate to protect IK. Rulings have said that the idea is not important, just the mode of expression of the idea. The court has ruled to say that even if the defendant in a suit has used a common stock of knowledge, no action can be brought.

Some form of Trademarks or Certification( Authentication ) Marks however lend themselves to the protection of IK. Products of tribal communities can be given a Mark certifying it as genuine. This form of protection could be easily applied to textiles and tapestries. For biological materials which in a lot of ways are the centre of controversy and around which spins a mega- bucks industry, some sui generis forms need to be developed.

The lead in this case has already been provided by the Convention on Biological Diversity (CBD). Of special relevance are Articles 8(j), 15 and 16. These deal with rights of communities, benefit sharing and transfer of technology specifically.

In order to protect IK, *national legislation* should compulsorily require the following conditions:

- Disclosure of origin of materials or knowledge used. For example, the use of a farmer variety in breeding a new variety; use of a medicinal or aromatic plant to make products or extracting vegetable dyes from certain minerals and plants.
- Evidence of Prior Informed Consent (in standard format) before using the bioresource.
- Evidence (in standard format) of the nature (monetary, non- monetary) mode and method of sharing benefits derived from using IK.

It needs to be kept in mind that the range of benefit sharing will vary from sector to sector. Benefits in the pharma and herbal sector will be high compared to agriculture where profits will not be of the same scale and share of benefits will be more modest.

- Applications for use of IK should be published in all major newspapers, specially the vernacular press.
- Proof of IK will be entertained in both written and oral form and in the form of community knowledge conveyed by third parties.
- The onus of proving compliance (burden of proof) should be reversed. In the case of a dispute, the user agency will be required to prove that all conditions of disclosure and benefit sharing have been met.
- The penalty for infringement should be severe enough to be an effective deterrent.

- Access to bioresources should be linked to the provisions of Article 16 of the CBD relating to transfer of technology. The Material Transfer Agreement needed for access to bioresources should be linked to an agreement to transfer technologies in various categories related to biodiversity , including biotechnology.

### **The core problem of IK protection**

International conventions and treaties dealing with IK are seldom, if ever implemented. ILO Convention No 169 which says a lot about legal standards for indigenous rights fails to protect the IPR of indigenous people. Whereas the UN Declaration on the rights of IP recognises the rights and aspirations of the IP, it will be a non- binding document which can not be legally enforced. In the International Treaty on Plant Genetic Resources (ITPGR), developed nations have successfully blocked an international recognition of Farmers Rights. They also contest any notion of paying for the use of traditional germplasm in a benefit sharing arrangement. The CBD which has attempted to push through the interests of IK , has been thwarted by the American refusal to ratify it and accept its conditions.

### **Need for international action**

It is clear that national level action can not be adequate to protect IK. Even if Indian legislation provides for the protection of local communities and their IK and the US carries on granting patents on Turmeric, Neem and Basmati, then the rights of communities will continue to be violated. Far from receiving any benefits for the use of their knowledge, they will lose any future options they might have, to develop it commercially for themselves.

Any serious and genuine effort to honour the contribution of Indigenous People and protect their knowledge systems, will have to be at the international level. Changes have to be made in international treaties like the WTO and the CBD, to secure the interests of Indigenous People.

1. Implement sincerely the relevant provisions of the international commitments like the ILO Convention, the IUPGR, the UNESCO/WIPO Guidelines for Protection of Folklore, the UN Draft Declaration on the Rights of Indigenous Peoples, and the CBD .
2. Retract the demand for patents on life forms- Article 27.3.b from TRIPS/ WTO
3. Do not remove the flexibility of countries to draft their own sui generis legislation for plant varieties by now insisting on compliance with UPOV.
4. Apply Article 29 of TRIPs which requires disclosure in the case of patent applications, to genetic resources and traditional knowledge used in inventions for which IPRs are claimed.

5. In the CBD, give primacy to conservation since that is what will conserve the basis of IK and continue to provide livelihoods and value addition opportunities to communities.
6. Link Articles 8(j), 15 and 16, as also 20 and 21 in all discussions relating to *access* to bioresources.
7. Use all possible national measures to strengthen the Biosafety Protocol to prevent contamination of genetic resources, till science can demonstrate safety of GM foods.
8. Enhance the scope of Article 23 of TRIPs to strengthen protection of geographical indications for goods other than wine and spirits, such as Darjeeling tea.
9. Ensure that any agreement on databases like the proposed Database Treaty (which will govern databases like the Indian TKDL) recognises the ownership of communities and includes provisions for PIC, MTA and benefit sharing when granting access.