

ECONOMIC EMPOWERMENT OF TRIBAL COMMUNITIES THROUGH TRADITIONAL KNOWLEDGE: PROBLEMS AND PROSPECTS

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Introduction

Education and wealth are the two wheels for the empowerment of any community. Education develops the cognitive faculty of mind which motivates to initiate new things and face new challenges for economic gain and further empowerment.

The tribal communities are the lovers of nature, living close to the vicinity of hills and forests which are the store house of the flora and fauna. The tribals have been living in such places where the basic facilities are quite unknown. Therefore they depend totally on the knowledge developed through observation of the flora and fauna. Thus they survive on the medicine which is found in the nature and protect themselves from various diseases. They also depend upon forest products. The tribals know how to combat environmental hardships and earn sustainable livelihood. Their wisdom is reflected in their water harvesting techniques, developing irrigation channels, construction of cane bridges on hills, adaptation to desert life, utilization of herbs and shrubs for medicinal purposes, meteorological assessment.

The tribals who were self-reliant and self-sufficient are now completely isolated and encircled with various problems—health, education, livelihood, security, social security, environmental pollution, potable drinking water due to opening of the tribal area with highways and industrialization. On the one hand the policy makers think it modernization of the tribal communities and creation of job opportunities for them. But it is a harsh truth that the tribals are not technically educated, thus not fit for the job. Ultimately they have to depend on their traditional sources of livelihood. Here it is a subject of great concern that industrialization has made encroachment in their natural habitat and exploited their traditional knowledge (hereinafter TK). Thus the corporate world is becoming richer and richer leaving the tribals in bewilderment, chaos and further creating the unfriendly tribal ambience.

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The trouble of the tribals does not end here; their displacement from their natural home due to compulsory acquisition of land for building coffer dams, roads, quarrying and mining operations and location of industries reservation of national parks. Thus they are losing their traditional abode which is the chief means of livelihood. Thus the tribals are the victim of developmental process-industrialization, infrastructure, i.e., road, dams, mining, electricity projects, and exploitation of the TK by the corporate.

Protections of TK of the local and indigenous communities seem to be one of the most contentious and complicated issue. The historical development of the protection of intellectual property in the wake of individual private property rights pushed TK and the innovative practices outside the purview of the formal intellectual property protection regime. Millennium poses serious challenge to the legal community to set new legal standard for tackling the problem of protection of TK for the economic empowerment of the tribals. TK is treated as knowledge in the public domains for free exploitation without showing any respect or concern for the effort taken by the communities to preserve and promote the same. The new technological developments, particularly in biotechnology, clearly demonstrate the significance and usefulness of TK for the development of new product of commercial importance. TK associated with the biological resources is the knowledge about a country's biodiversity; the applied uses and applications of biological resources and the prevalent practices. TK has direct correlation with the biodiversity of the country. It is an intangible component of the resource itself. TK has the potential of being transformed into commercial opportunity, providing useful leads for development of products and processes. Hence, a share of benefits must accrue to creators and holders of TK. TK is valuable in global economy, Important for biotechnology based industries and agriculture. Traditional societies depend on it for their food and healthcare needs, Important for conservation and sustainable development of environment and management of biodiversity, food security of the country is linked to protection of TK.

There is a need to enable tribal communities to harness TK for their economic upliftment and growth and fast mobility to the tribal societies. TK is a knowledge developed by local and indigenous communities over time in response to the needs of their specific local environment. The World Intellectual Property Organization (WIPO) defines TK as—indigenous cultural and intellectual property, indigenous heritage, and customary heritage rights. The need to protect TK captured the attention of the international community only recently but the standard setting was left to the national

governments. The absence of the international standards causes serious negligence for the protection of TK and the benefits of new technology to the inhabitants of the locality, i.e., the tribals. It is the tribals who have protected the herbs by protecting the forests and animals. But TK that is a community property at present is exploited by the corporate without compensating anything to the tribals. Even the culture they have developed is utilized by the movie industries as a source in the public domain. But TK is a knowledge which is learnt, experimented, protected and carried over from generations to generations with all reverence creates rights in the community for its personal use and commercial exploitation for livelihood and economic progress. But the fact is quite different. The biotechnology industry depends on the herbs and shrubs but the tribals have no share in price of the raw material or in the profit of the product. Further the electricity generated out of the hydel projects which use water of the springs does not supply the same to the tribals. In this context, the mechanism requires to be developed for tribal economic empowerment.

In this context, the paper seeks to study the way to empower the tribal communities through the protection of their TK. But there is no documentation of their knowledge. It is not limited to the medicinal herbs rather their cultural heritage, tribal system of medicine, folk lore and dances which are being copied by the film industries. The constitutional protection and PESA provision is also the subject of investigation in this paper.

Patenting of TK

It is a fact that there are around 100 million forest dwellers in India, most of them belong to tribal communities. They depend on both timber and non-timber forest produce. In turn, the forest dwellers have over the centuries gathered knowledge from the natural environment around their community. This community has in one sense been thankfully insulated from the ways of modern man and has carried on the traditions of their ancestors. As a whole, the forests and its dwellers give to India an abundant knowledge about the traditional value of various forest products.

The way intellectual property rights have been designed in modern commerce, TK cannot be protected. For instance, TK cannot be patented because such knowledge lacks inventive character, because of the inherent lack of novelty. TK is also often held collectively by communities, rather than by individual owners. This TK is information that is transmitted from generation to generation generally within the community or within families or within the

community in an oral form without any adequate documentation. This has caused TK to be undervalued and marginalized. In fact, one of the fears in these communities is that if the knowledge were to be documented it would have been lost to the community by expropriation.

In India, the Forest Act itself acknowledges this fact and provides a framework for documentation of such knowledge and the nature of evidence required for recognition of the rights of these communities in the intellectual property in respect of such knowledge. The provisions of the Biological Diversity Act, 2002 and the Forest Rights Act, 2006 both provide a shield for tribal TK, by, on the one hand, respecting and protecting the knowledge of the local communities related to biodiversity and on the other, declaring that the intellectual property rights in such knowledge belongs primarily to members of the community collectively. In broad terms, patents can be defined as exclusive rights granted for an invention—either a product or a process—that offers a new technical solution to a specific problem. A patent implies the grant of a—monopoly to an inventor who has used his knowledge and skills to produce a product or process which is new, involves an inventive step and is capable of industrial application.

The TRIPS Agreement also has some provisions having limited application to the protection of TK. The obligation to protect geographical indications can be used to protect TK if associated with the indication used for production and sale of goods. It is made clear that a given quality, reputation or other characteristics of the goods essentially attributable to its geographical origin are to be considered in identifying the geographical indications for protection. Thus it may be possible for protection through geographical indication TK associated with goods. Disclosing TK which forms part of an invention and of the state of the art or prior art will promote the progress of science by creating an incentive for the maintenance of TK systems. This will happen by TK being widely and universally accepted within ‘western or modern innovation protection systems’ and becoming a reference point within the regular operations of the international patent system. It will provide opportunities to the tribals for economic exploitation along with the scientists. It will also stop the theft of the TK and the biotechnological industry will be benefited.

National Knowledge Commission and TK

The National Knowledge Commission of India has also showed its concern over the threat and danger on TK. It has recommended to protect TK and said:

“Establish goals for conservation of natural resources: Natural populations of around 12% of the 6000 species of potentially medicinal plants are currently estimated to be under threat due to degradation and loss of habitats alongside unsustainable ways of harvesting and lack of cultivation. The problem of growing scarcity also leads to the danger of more counterfeit material being marketed. It is therefore necessary to support conservation and sustainable harvesting efforts in the forestry sector and cultivation in the agricultural sector. Direct support for conservation and cultivation as well as indirect methods through incentive policies should be pursued for nurturing these plant resources. The wild gene pool of India's medicinal plants should be secured, via establishment of a nationwide network of 300 ‘Forest Gene Banks’ across the 10 bio-geographic regions of the country.”

“Support primary healthcare in rural areas: With 70% of Indian population relying on traditional medicine for primary health care in the absence of adequate state primary health care, it becomes necessary to establish evidence-based guidelines for this informal-sector usage. A nation-wide network of ‘Home Herbal Garden’ and ‘Community Herbal Gardens’ (CHG) can be created to support the primary health care needs of rural communities for those plants and medications established as efficacious by evidence-based research.”

The Knowledge Commission has proposed that a major re-branding exercise of Indian traditional medicine can ensure health revolution in India. Better branding of Indian traditional medicines can prove to be effective in well-designed clinical trials and can increase safe and effective healthcare options. Such proven medications can be integrated with the national healthcare system. Such evidence based well-validated and uniquely Indian holistic healthcare system combinations must be marketed extensively globally. In order to achieve these goals as rapidly and efficiently as possible, the Government of India may consider establishing a National Mission on Traditional Health Knowledge (NMTHK), which would take up these tasks in an organized way. It should be a relatively small body in terms of its own infrastructure with powers to enable it to recommend targeted funding in identified areas. It should support initiatives at many different levels, including state and local levels, and coordinate with Ministries of Health, Science and Technology, Forestry, Agriculture, and Commerce as well as with the NGOs and private sector. The Mission leader must be a person with high public credibility, have extensive knowledge and experience in

the field with established managerial capabilities and experience of dealing with all the concerned stakeholders.

Biopiracy, TK and the Tribals

One of the biggest threats to biodiversity and related traditional knowledge is ever-increasingly bio-prospecting activities on behalf of ethno botanists, pharmaceutical companies and others who wish to profit from the rich biodiversity and traditional knowledge in indigenous territories. Current legal systems are inadequate, allowing for the biopiracy of biodiversity and TK. As demand for commercialization of biodiversity and TK increases at a rapid pace and as the world globalizes, the indigenous societies are being encroached upon faster than TK can be protected. Their cultures and knowledge are being lost. In many parts of the world, the very existence of indigenous societies is under threat. The reason lies in the inadequacy of legal system that address TK. General issues relating to the protection of traditional knowledge and clash within systems all make TK highly vulnerable to biopiracy.

Several traditional plants and related knowledge in Asia, specifically India, have also been allegedly falsely patented by the US patent office, including-*neem*, *haldi*, pepper, *harar*, mustard, *Basmati* rice, ginger, castor, *jaramla*, *karela* and jamun. The African continent has too been plagued by biopiracy-with the case of West Africa's sweet genes and one of the most recent cases involving-*hoodi* still unresolved. Some cases have been resolved but clearly demonstrate the problems with the intellectual property system.

TK is generally associated with biological resources and is invariably an intangible component of such a biological resource. TK has the potential of being translated into commercial benefits by providing leads/clues for development of useful practices and processes for the benefit of mankind. The valuable leads/clues provided by TK save time, money and investment of modern biotech and other industries into any research and product development. Reasonably, we can say that a share of such benefits should accrue to the creators and/or holders of such TK. Some countries have specific legislation protecting this kind of knowledge while some other countries feel their existing IPR regime protects such knowledge. As of now, India does not have a specific *sui generis* legislation to protect such TK and folklore but is in the process of developing such legislation.

In the recent past, there have been several cases of biopiracy of TK from India. First, it was the patent on wound-healing properties of

haldi (turmeric); now patents have been obtained in other countries on hypoglycemic properties of *karela* (bitter gourd), brinjal, etc. An important criticism in this context relates to foreigners obtaining patents based on Indian biological materials without acknowledging the source of their knowledge or sharing the benefits. There is also the view that the Agreement on Trade-Related Aspects of Intellectual Property Rights (the TRIPS Agreement) is aiding the exploitation of biodiversity by privatizing biodiversity expressed in life forms and knowledge. The *neem*, the legendary tree of India has been used as a bio pesticide and medicine in India for centuries. The European Patent Office (EPO) revoked in its entirety patent number 436257 which had been granted to the United States of America (US) and the multinational corporation W.R. Grace for a fungicide derived from seed of a *neem* tree.

Secondly, turmeric-in 1993, the US PTO granted the University of Mississippi Medical Centre patent rights over healing a wound by administering turmeric to a patient afflicted with a wound but again, turmeric has been used for centuries in India. Indians grow up with a constant awareness of turmeric tube (*haldi kund*) when dried keeps practically forever. The patent was eventually cancelled in 1998 after re-examination proceedings. But revealed to India and to indigenous societies around the world, again, how easy it was to falsely patent centuries-old traditional knowledge.

Thirdly, *Basmati* rice-in 1997, the US patent office granted a patent in September 1997 to Rice Tec 'for a strain of *Basmati* rice, aromatic rice grown in India and Pakistan for centuries. It violates both TRIPS and the Convention on Biological diversity (CBD). Accordingly, the South Asia Commission on Economic and Social Policy, Rice Tec's patent also violated the CBD in not recognizing the sovereign Rights of India and Pakistan over *Basmati* rice. The *Basmati* case demonstrates the problem as illustrated in TRIPS that patents are granted to biotechnological processes. Thus, even though *Basmati* rice has been in South Asia for centuries, Rice Tec just altered it slightly through crossing with a Western strain of grain, and successfully claimed it was its own.

Fourthly, *maca*-in 2001 after the *Viagra* craze, two US companies patented extracts of the Andean plant, *maca* (*Lepidium Meyenii*) which has traditionally been used to enhance fertility and sexual function. The patents were granted on the basis of-unlocking *maca*'s chemical secrets through advanced processes.

It has become clear, though narrating these few cases that intellectual property laws cannot or are not being effectively applied

to prevent the biopiracy of TK. TK is being treated as a free input into research and commercial product development. When patents are falsely granted, equitable benefit sharing is not taking place either, while indigenous people remain subject to biopiracy and become ever more marginalized in the process. Recently amended patent law of ours contains provisions for mandatory disclosure of source and geographical origin of the biological material used in the invention while applying for patents in India. Provisions have also been incorporated to include non-disclosure or wrongful disclosure of the same as grounds for opposition and for revocation of the patents, if granted. To protect TK from being patented, provisions have also been incorporated in the law to include anticipation of invention by available local knowledge including oral knowledge, as one of the grounds for opposition as also for revocation of patent.

In order to further strengthen these provisions, a new provision has been added to exclude innovations which are basically traditional or aggregation or duplication of known properties of traditionally known component or components from being patented. Granting of patents in respect of TK, concern that has been expressed in the discussion in the council for TRIPS is about the grant of patents or other IPRs covering traditional knowledge to persons other than the indigenous peoples or community who have originated the knowledge and legitimately controlled it. The view has been expressed that the granting to patents on TK already in the public domain or without the consent of indigenous people and local communities amount to unauthorized appropriation of the knowledge. The tribals are required to aware about TK and train them for documentation so that they can be ensured for their livelihood.

Empowerment Mechanism for the Tribals

TK is being used without the authorization of the indigenous people or communities who have originated and legitimately controlled it and without proper sharing of the benefit that occurs from such use. It has been suggested that the starting point should be explored possibility for making more effective use of the exiting IPR system for protecting TK of indigenous people and local communities. It has been suggested that the best mechanism of protection of TK and provisions of livelihood to them would be through system based on bilateral contract between holder of TK and persons or companies wishing to access and use the knowledge. Secondly, the applicant for patent that use TK associated with genetic resources should be required to disclose the course or the origin of the source of the TK in their patent applications. Thirdly, only a system of protection of TK which provides 'proprietary rights' can ensure that market forces will

be operative to generate fairness and equity. The Indian legislation for the Protection of Plant Varieties and Farmers' Rights Act, 2001 also acknowledge that the conservation, exploration, collection, characterization, evaluation of plant genetic resources for food and agriculture are essential to meet the goals of national food and nutritional security as also for sustainable development of agriculture for the present and future generations. It also acknowledges that the plant genetic resources for food and agriculture are the raw material indispensable for crop genetic improvement. The concept of effective benefit sharing arrangement between the provider and the recipient of the plant genetic resources forms an integral part of our Act. The protection provided to a plant variety bred by a breeder can be cancelled if there is an omission or wrongful disclosure of such information.

Indian TK available to the USPTO—patent examiners of the United States Patent and Trademark Office (USPTO) are now able to access the database of TK. Thanks to the Indian government according its permission in November 2009, India's Council of Scientific and Industrial Research, and the Department of *Ayurveda*, *Yoga* and Naturopathy, *Unani*, *Siddha* and Homeopathy was credited with the development of the TK and Digital Library (TKDL), which is a 30 million page searchable database of TK translated from numerous languages such as Hindi, Sanskrit, Arabic, Persian, Urdu and Tamil into English, Japanese, French, German and Spanish. The EPO was allowed the use of the TKDL in February 2009. The Indian Department of Industrial Policy and Promotion (DIPP) and USPTO announced on the 23rd of November 2009 that they have entered into a Memorandum of Understanding (MOU) on comprehensive bilateral cooperation for IPR protection and enforcement. Under the terms of the MOU, the USPTO and DIPP will cooperate on a range of IPR issues, focusing on capacity building, human resource development, and raising public awareness of the importance of IPR.

Protection of TK in India by Patent: Legal Aspects

This United Nations (UN) Draft Declaration, in Article 29, specifically states that:

“Indigenous people are entitled to the recognition of the full ownership, control and protection of their cultural and intellectual property. They have the right to special measures to control, develop and protect their sciences, technologies and cultural manifestations, including human and other genetic resources, seeds, medicines, knowledge of the properties of fauna and flora,

oral traditions, literatures, designs and visual and performing arts.”

A recent positive initiative is the drafting of a set of corporate guidelines for businesses that want to use native plants and TK from indigenous communities to make commercial drugs. In April 2002 in Hague, delegates of the UN Biodiversity Congress from 166 countries negotiated and adopted global guidelines during a two-week long UN sponsored CBD conference that was designed to encourage pharmaceutical companies to make responsible agreements with countries whose resources they use.

The Cancun Declaration and Cusco Declaration on Access to Genetic Resources: In February 2002, Environmental Ministers from 12 countries met in Cancun, Mexico met to discuss issues related to biodiversity in their countries, identifying a need to establish terms governing the granting of patents.

It has also been suggested that a requirement on patent applications to disclose in their applications any traditional knowledge used in the invention in question could help in the assessment of novelty and also assist countries with possible claims to examine the application and oppose the patent in time. The Geographical Indication of Goods (Registration and Protection) Act, 1999 passed by the Parliament of India is another step taken by India. The Act primarily intends to protect the valuable geographical indications of our country. The protection under the Act is available only to the geographical indication registered under the Act and to the authorized users. The Act permits any association of persons or producers or any organization or authority established by law representing the interest of the producers of goods to register a geographical indication. It may be possible to argue that the holders of TK in goods produced and sold using geographical indication can register and protect their TK under this law.

Conclusion

The development and use of TK in the market economy can protect the rights of the tribals, their exploitation, migration and dehumanization due to joblessness. The exploitation of TK without their consent, may facilitate otherwise of exploitation of their knowledge without any rewards to them.

It has been suggested that the development of database on TK would help patent examiners discover relevant prior art so as to improve examination of patent application and prevent the grant of

patents for subject matter that should not be patentable. Database would also help potential licensees in terms of searching for knowledge, innovations and parties' various suggestions have been advanced in India to extend protection to knowledge, innovations and practices. These include documentation of TK, registration and innovation patent system, and development of a *sui generis* system. It is sometimes believed that proper documentation of associated TK could help in checking biopiracy.

Documentation could be a double-edged sword. It is assumed that if the material/knowledge is documented, it can be made available to patent examiners the world over so that prior art in the case of inventions based on such materials/knowledge are/is readily available to them. It is also hoped that such documentation would facilitate tracing of indigenous communities with whom benefits of commercialization of such materials/knowledge has to be shared. The PESA Act 1996 also confirms the rights of the tribals for their economic sustainability.

The tribals who have been living in the natural environment from ages have rights over entire ecosystem. They have rights because they have been protecting these resources from ages emotionally. But because of illiteracy and innocence, the corporate are taking away their TK for their commercial gain. They are now bewildered. More so the cofferdams and hydel projects are forcing them to migrate from their traditional home destroying their rich IP. Thus the rehabilitation of the tribals at their natural abode along with commercial exploitation with their consent, sharing the profits is the way to empower them.

It is also essential to mention here that on the pattern of the Land Acquisition Act, there is requirement of 'Intellectual property Acquisition Act' so that adequate compensation may be granted to the tribals. Secondly, the rehabilitation of tribals should be along with the redevelopment of the lost vegetation. The *Sarva Shiksha Aviyan* has its own way to make the tribals literate but along with literacy, the awareness for their rights is also required with political support to fight against the odds.

References

1. The Patents Act, 1970 as amended in 2005. Section 3(d) recognizes that mere discovery is not patentable. This protects TK of the tribals.
2. The Geographical Indications of Goods (Registration and Protection) Act, 1999. The *Ayurvedic* practitioners use the plants, leaves, flowers for preparing medicines on the basis of the knowledge obtained from the tribals without

paying any thing. Even the fruits of geographical repute are being cultivated and sold without paying anything to the tribals.

3. The Biodiversity Act, 2002: The national and the state biodiversity authorities have been constituted for the monitoring of the use of any biodiversity for patenting. Any one aggrieved by the order of such authorities may appeal to National Green Tribunal.
4. The Plant Variety and Farmers Rights Act, 2001: The tribals have still using the traditional seeds which is the sources of research for hybrid seeds, but they are not benefited. Even their skill in plant breeding is not recognized.
5. The Forest Rights Act, 2006: Section 6 of the Act provides rights to *Gram Sabha* for passing the resolution on all the rights. But they are helpless. Most of them are disunited by the allurements and threat of the corporate world.
6. Convention on Biodiversity, 1992 has been confirmed by India in 1994. The convention requires the states to take steps for protection and sustainable use of the world's diverse plants and animal species.
7. The Cancun Summit, 2010 does talk about reduction of carbon emission but without the help of the tribals, plantation of trees and their protection and preservation, the AGENDA 21 cannot be achieved.
8. UN Draft Declaration on the Indigenous People: Article 29.
9. The PESA Act, 1996: This Act provides special rights to the tribals but it is not being implemented.
10. The Forest Dwellers Rights Act, 2006: This provides economic rights to the forest dwellers within their vicinity.

