BIOPIRACY OF TRADITIONAL KNOWLEDGE

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Abstract

Traditional Knowledge is knowledge preserved by indigenous communities conducive to their livelihoods who are residing in much adverse condition. Bio-piracy is a violation of the rights of traditional communities over their biological resources and related knowledge by Obtaining IPRs usually patents or Plant Breeders Rights to gain monopoly control over biological resources, related traditional knowledge, or commercial products based on these resources or knowledge, without the consent of, or any benefits going to, the original holders of the resources/knowledge. Lack of legal protection has led to patenting of many TK based products in foreign countries. These activities adversely affect the livelihoods of TK holding societies and also cause serious threats to the biodiversity. There should be complete protection system to protect TK from misappropriation by third parties. In this regard TKDL created by Indian Government is a good intervention, which can ensure the protection and preservation of TK. The crucial importance of indigenous, traditional and local communities in preserving and nurturing biodiversity, biogenetic resources and associated traditional knowledge must be legally recognized by establishing the concept of community right.

Keywords: *Traditional Knowledge, Bio piracy, Bio diversity, TKDL, Community right.*

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INTRODUCTION

Traditional knowledge[1] is a valuable source of knowledge developed over generation by indigenous and local communities in various parts of the globe. The indigenous and local people who are custodian of TK preserve and conserve the knowledge over thousands of years. However, TK is under current threat of misappropriation by others without accruing any benefits to the original holders of TK which is called bio piracy. Traditional Knowledge is the integral part of indigenous communities around the whole world. Lack of legal protection has led to patenting of many TK based products in foreign countries. These activities adversely affect the livelihoods of TK holding societies and also cause serious threats to the biodiversity. There should be complete protection system to protect TK from misappropriation by third parties. It is necessary to protect TK holder's right which is getting hampered by third parties where benefit sharing method is not following by patent holders of TK based products. Giving proper protection to TK holders will ultimately flourished the TK based industries without hampering sustainable development process. TK plays an important role in the conservation of biodiversity and its traditional uses. The new technological developments clearly demonstrate the usefulness of TK for the development of new product of commercial importance.

OVERVIEW ON BIO PIRACY OF TRADITIONAL KNOWLEDGE IN INDIA

Bio-piracy is a violation of the rights of traditional communities over their biological resources and related knowledge. The implications of bio-piracy are economic as well as ethical: Obtaining IPRs usually patents or Plant Breeders Rights to gain monopoly control over biological resources, related traditional knowledge, or commercial products based on these resources or knowledge, without the consent of, or any benefits going to, the original holders of the resources/knowledge. The original holders of biological resources and related traditional knowledge do not get any share in the profits made from commercializing the products based on their resources/knowledge. They also do not get any recognition for nurturing and developing the resources/knowledge in the first place. Once an IPR is acquired by the bio-pirate, the original holders of a biological resource or related traditional knowledge are barred from making any commercial use of the IPR-protected knowledge or resource. This could lead to a situation where, for example, a community is not allowed to sell an indigenous product that is covered by an IPR. The IPR-holder dictates the terms of use of the

[1] Hereinafter referred as TK

IPR-protected resource/knowledge, which could mean that traditional communities who are the original holder could lose access to, or control over, their resource/knowledge. The investigation of biological resources for new commercial uses has been an inherent part of global economic and social development. The problem arises when bio-prospecting leads to bio-piracy or environmentally unsustainable practices such as collecting huge quantities of samples from an area. The term 'bio-prospecting' has acquired strong negative connotations and is often used in a sense that implies that bio-prospecting necessarily leads to bio-piracy. Some traditional communities may also find bio-prospecting offensive because it seeks to commercially exploit biological resources and related traditional knowledge which are sacred, or which support their livelihoods.[2]

CASES OF TK MISAPPROPRIATION

Turmeric

In 1995 Suman K. Das and Hari Har P. Cohly, two researchers based at the University of Mississippi Medical Center in Jackson, Mississippi, USA, applied for a US patent on the use of turmeric in wound healing (US Patent No. 5,401,504). More specifically, the application related to the use of turmeric to augment the healing process of chronic and acute wounds. The inventors claimed to 'have found that the use of turmeric at the site of an injury by topical application and/or oral intake of turmeric will promote healing of wounds'. This was based on experimental evidence that showed that turmeric causes endothelial cells to proliferate, indicating that this molecule can be used to augment wound healing. The patent application acknowledged that 'turmeric has long been used in India as a traditional medicine for the treatment of various sprains and inflammatory conditions'.[3] The patent application was examined, and the claimed invention was considered novel at the time of application on the basis of the information then available to the examining authority.[4] In 1996, The Council of Scientific & Industrial Research (CSIR), India, New Delhi requested the US Patent and Trademarks Office (USPTO) to revoke the patent on the grounds of existing of prior art. CSIR did not succeed in providing that many Indians already use turmeric for wound healing although turmeric was known to every Indian household for ages. Fortunately, it could

[2] Available at: http://nbaindia.org/uploaded/docs/traditionalknowledge_190707.pdf (Accessed on 16/032018)

[3] Susette Biber-Klemm, Thomas Cottier, Danuta Szymura Berglas (eds), '*Rights to Plant Genetic Resources and Traditional Knowledge Basic Issues and Perspectives'* (CABI 2005)

[4] Intellectual Property and Genetic Resources, Traditional Knowledge and Traditional Cultural Expressions – An overview (WIPO 2012)

provide documentary evidence of traditional knowledge including ancient Sanskrit text and a paper published in 1953 in the Journal of the Indian Medical Association. The patent was revoked in 1997, after ascertaining that there was no novelty.[5]

The Basmati Case

The basmati rice controversy emerged in the late 1990s in response to a US patent. Specifically, the US Patent and Trademark Office (USPTO) granted patent number 5,663,484 on 'Basmati rice lines and grains' to the Texas-based company RiceTec Inc. on 2 September 1997. Originally, the patent had 20 claims on the protected subject matter covering the novel basmati varieties that the researchers claimed to have developed. This caused significant alarm and outrage among Indian farmers and NGOs. At the time, many interpreted the patent to mean an outright monopoly on basmati and thus restrictions on export to the US where the patent had been approved. RiceTec's claims were for a specific rice plant (Claims 1–11, 14), for seeds that germinate the patented rice plant (Claim 12), for the grain that is produced by the rice plant (Claims 13, 15–17) and for the method of selecting plants for breeding and propagating particular grains of rice (Claims 18–20). The overly broad wording and scope of the patent can be blamed for much of the public outrage. Shortly after the patent was granted, Indian NGOs began a campaign against it, also garnering support from the Indian government and drawing international attention to the patent. A re-examination application was filed by an organization named the Agricultural and Processed Food Products Export Development Authority in India, with government support. Subsequently, RiceTec agreed to withdraw some claims and, under a re-examination certificate (4525, 29 January 2002), these were formally retracted. Claims 1–7, 10 and 14–20 were cancelled and descriptions of the rice were altered in the certificate. However, Claims 8, 9 and 11 for specific novel rice lines were maintained.[6]

Neem

Seeds of a species of neem tree *(Azadirachta indica)* have been ground and scattered on fields by Indian farmers for centuries to protect their crops from insect pests. However, the neem tree has many other uses: it appears to be effective against malaria and internal worms; the leaves are used to protect stored grain from pests and clothes from moths; neem oil is

[5] Available at: http://lifeintelect.com/blog/2013/10/24/traditional-knowledge-and-intellectual-property-case-of-turmeric/ (Accessed on 16/03/2018)

[6] Deniel F. Robinson. *Confronting Bio-piracy: Challenges, Cases And International Debate* (Earthscan, 2010)

used to make candles, soap, a contraceptive, and can even fuel diesel engines; and 500 million Indians reportedly use neem to brush their teeth. Most of these discoveries were first made by members of Indian rural communities. As a pesticide, neem has great potential as a cheap and environmentally friendly alternative to commercial synthetic pesticides.[7] In the early 1990s, the United States Patent and Trademark Office issued a patent to W.R. Grace, which covers a method of creating a stabilized azadirachtin in solution and the stabilized azadirachtin solution itself (US Patent 5,124,349). Subsequently, the US Environmental Protection Agency registered Grace's stabilized azadirachtin solution for use on food crops under the name of Neemix (Wolfgang, 1995). W.R. Grace also filed a patent for neem for its use as an antifungal product with the EPO (European Patent 0436 257). This patent claimed the invention of a novel insecticide and foliar fungicide derived from a neem seed extract and the processes used to obtain the neem oil. This pesticide was alleged to have the ability to repel insects from plant surfaces, prevent fungal growth, and kill insect and fungal pests at various life stages. This patent was challenged by Indian NGOs and the Indian Government. Eventually, in 2000, the Opposition Division of the EPO revoked the patents after it was shown conclusively that the claims did not fulfill the requirement for novelty in view of their prior public use in India.[8] The patent on Neem was revoked in May 2000 and it was reconfirmed on 8th March 2005 when the EPO revoked in entirety the controversial patent, and adjudged that there was "no inventive step" involved in the fungicide patent, thus confirming the 'prior art' of the use of Neem.[9]

TRADITIONAL KNOWLEDGE DIGITAL LIBRARY (TKDL) IN INDIA

Indian government has designed a protection for TK whose main goal is to facilitate its use as prior art in the patent examination procedures, and also to use it in order to create a sui generis protection. The National Institute of Science Communication of the Indian Council of Scientific and Industrial Research has created the Traditional Knowledge Digital Library (TKDL), and it has planned to sign agreements with international patent offices for the use of this database confidentially, so as to hinder unauthorized uses of the collected TK.[10] India's Traditional Knowledge Digital Library (TKDL) warrants special mention and description

[7] Susette Biber-Klemm, Thomas Cottier, Danuta Szymura Berglas (eds), '*Rights to Plant Genetic Resources and Traditional Knowledge Basic Issues and Perspectives'* (CABI 2005)
[8] *Ibid*.
[9] Available at: http://www.navdanya.org/campaigns/biopiracy (Accessed on 29/03/2014)
[10] Evanson C. Kamau and Gerd Winter (eds) *Genetic Resources, Traditional Knowledge and Law* (Earthscan, 2009)

since it is currently accessible to a number of international patent offices and provides a good example of how it can aid the IP system to prevent unwanted use of TK by third parties. TKDL is a collaborative project of the council of Scientific and Industrial Research (CSIR), Ministry of Science and Technology and Department of AYUSH (Ayuveda, Yoga and naturopathy, Unani, Siddha and Homeopathy) as well as the Ministry of Health and Family Welfare, and is being implemented at CSIR. The project was initiated in the year 2001 for purposes of providing information on TK, in languages and format that patent examiners at International Patent Offices (IPOs) can understand. The library is aimed at constructively organising TK and making it available in a format that can be easily disseminated.[11] This has so far prevented the granting of wrong patents since TKDL serves as an accessible non-patent literature database that deals with traditional knowledge subject matter.[12] In this regard TKDL is a good intervention, which can ensure the protection and preservation of TK. Access to TKDL agreements have been concluded with a number of international patent offices and TKDL evidence has been utilized to successfully challenge applications for patent registration, which utilized unmodified form TK that already forms part of the TKDL. In this sense, TKDL is used for defensive protection of TK. Defensive protection 'safeguards against illegitimate third-party assertion of IPRs over TK.'[13]

It includes over 200,000 traditional medicine formulations on Ayurveda, Unani and Siddha comprising 34 million A4 size pages. The encyclopedia published by TKDL contains information on traditional medicine, along with exhaustive references, photographs of plants, and scanned images from original texts of traditional systems. TKDL is trying to prevent "bio-piracy" in the pharmaceutical industry by collating and translating remedies from traditional medicine systems of India. The government is now increasingly concerned about cultural piracy, particularly in regard to yoga. In 2001 copyright had been awarded to Bikram Choudhury, Los Angeles-based "guru to the stars" for the 26 postures he uses in his "hot yoga" sessions. Traditional practices such Yoga have developed over the years and most often viewed as an anthropological knowledge free from commoditization and commercialization. In India, the centuries-old tradition is still taught free of charge in public

[11] Jeevan VKJ, Digital library development: identifying sources of content for developing countries with special reference to India, (2004) 36 The International Information & Library Review, 185

[12] Gupta VK, Traditional Knowledge Digital Library, paper presented at the Sub-Regional Experts Meeting in Asia on Intangible Cultural Heritage: Safeguarding and Inventory-Making Methodologies (Bangkok, Thailand, 13-16 December 2005)

[13] Pamela Andanda 'Stricking A Balance Between Intellectual Property Protection Of Traditional Knowledge, Cultural Preservation And Access To Knowledge' (2012) 17 JIPR 1

parks. Everybody is free to practice yoga but nobody is entitled to claim monopoly right over traditional yoga practices. Efforts are being carried out by the library to document descriptions of less common yoga poses to prevent false claims like a new form of the ancient art has been invented. A list from 16 ancient texts is compiled by the Hindu gurus and some 200 scientists to prevent yoga teachers in the United States and Europe from acquiring monopoly over the established poses through patent, copyrights and trademark. The objective of TKDL is to check misuse of Indian TK and to create new intellectual property for promoting access to medicines. The TKDL also contains translations into French, German, Japanese and Spanish, of these sources, originally written in Hindi, Sanskrit, Arabic, Persian and Urdu. This would be helpful in breaking language barriers and facilitating international search of prior art. For conducting prior art searches TKDL would be an authentic source for patent examiners in global patent offices. This would help the examiners to cross-check the validity and originality of patent applications. It would assist examiners in determining whether an invention is already known and recorded in ancient literature. Traditional Knowledge Resource Classification (TKRC) is an integral part of TKDL and is linked to an internationally accepted International Patent Classification to comply with international standards. TKDL has proved boon to protection of TK from bio-piracy.

TKDL has facilitated the access to information (which is not easily available to patent examiners) with the patent offices of many countries in order to minimizes the possibility of patenting "inventions" based on TK of India. In order to prevent the abuse and misappropriation of TKDL, the access of TKDL to Patent office is based on signing of an Access Agreement on non-disclosure, i.e., there will not be any third party disclosure unless it is essential for search purposes. These patent offices are allowed to utilize the TKDL for prior art searches and examination of patent applications. It is mandatory for these offices not to reveal the contents of the TKDL to any third party in order to protect India's interest against any possible misuse. After getting access to TKDL, the European Patent Office (EPO) has rejected 15 patent applications based on traditional medicinal knowledge of India of various international companies during the past one year.[14]

CONCLUDING REMARK

Bio piracy must be condemned and forsaken by international community as illegal and

[14] Bala, Anu. 'Traditional Kowledge and Intellectual property rights – An Indian Perspective' Nov 1, 2011 Available at SRRN http//srrn.com/abstact=1954924

unethical appropriation of bio resources owned by the indigenous and local communities which would perturb the continuous improvement, evolution and development of TK and which lead to the complete erosion of traditional knowledge systems existing in different parts of the globe. Hence, as submitted by India at WIPO,[15] there is a need to provide appropriate legal and institutional means for recognizing the rights of tribal communities on their TK based on biological resources at the international level. There is also a need to institute mechanism for sharing of benefits arising out of the commercial exploitation of biological resources using such TK. This can be done by harmonizing the different approaches of The Convention of Biological Diversity on one hand, and the TRIPS agreement on the other, as the former recognizes sovereign rights of the States over their biological resources and the latter treats intellectual property as a private right. The crucial importance of indigenous, traditional and local communities in preserving and nurturing biodiversity, biogenetic resources and associated traditional knowledge must be legally recognized by establishing the concept of community right. The legal recognition of community rights over biogenetic resources and associated traditional knowledge is fundamental to the protection of TK. The Indian government must develop suitable strategies including legal mechanism and policy decisions for safeguarding and enforcing the community rights of indigenous local communities over their traditional knowledge and associated biogenetic resources.

Hence, there is urgent need to design a sui generis legal mechanism in India for the purpose of TK.

[15] Protection of Biodiversity and Traditional knowledge- The Indian Experience, submitted by India at Committee on Trade and Environment Council for Trade-Related Aspects of Intellectual Property Rights, WT/CTE/W/156, IP/C/W/198, 14th July 2000, p. 2.