

Neoteric Vision of Culture, Ethics and Heritage Towards Human Dynamics

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Traditional Knowledge Digital Library: A Weapon against Bio-Piracy

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Abstract: *Traditional knowledge refers to knowledge or practices around the world that have been passed down from generation to generation as part of Indigenous groups' traditions or heritage. Indigenous groups act as guardians or custodians of such type of knowledge or tradition. There are indigenous groups or communities all around the globe that have such information and pass it on to their upcoming generation. Traditional Medicinal Knowledge is crucial in the treatment of various ailments. In many countries, the only available treatment at reasonable prices to the poor is traditional medicines. When the world was amid a pandemic at the same time, indigenous peoples used their traditional knowledge and customs to discover solutions to the problems that the pandemic brought them. During the Covid-19 pandemic, many individuals were attributed directly to this type of knowledge. This chapter aims to highlight the past issues relating to medicinal traditional knowledge and to highlight the role of the Traditional Knowledge Digital Library in combating bio-piracy.*

Keywords: *Traditional Knowledge, Indigenous Groups, Treatment, Bio-piracy*

Introduction

Traditional knowledge is developed in a manner that reflects community traditions; it is generally intergenerational and created and maintained jointly. As a result, "traditional" does not always imply "ancient" but rather refers to how information is created, kept, and shared. Traditional knowledge relates to indigenous and local



communities' knowledge, innovations, and traditions from around the world. Oral transmission of traditional knowledge occurs from generation to generation, based on centuries of experience and adaptations to the local culture and environment. It can be found in a wide range of concepts such as time calculation, food articles, plant properties, spice uses, yoga practices, and so on. Traditional knowledge¹ is now universally acknowledged as having played and continuing to play a critical role in economic, social, and cultural life and development in both traditional and modern societies. The importance of traditional knowledge has been emphasized by the recent increased understanding of the value of biodiversity, the necessity for its conservation, and its sustainable usage for present and future generations.

Traditional knowledge is generally considered the collective heritage of a particular indigenous people or local community. The indigenous, local, or native community's knowledge base has been preserved and passed down through generations, to the point where it has become the community's identity. Elders in Indigenous communities play a vital role in conserving and propagating indigenous traditional knowledge, culture, and customs that can benefit the health, well-being, and rehabilitation of their own and wider communities. The most important aspect of Traditional Knowledge is that it has ancient roots and is frequently oral. India, being a developing country has communities with information passed down from their forefathers; this type of knowledge is valuable in a variety of ways. Traditional Knowledge System (TKS) is the people's know-how, collected through their daily lives, to overcome obstacles and harness the potentialities in their immediate surroundings. TKS evolved in a specific location within a specific physical and socio-cultural environment, reflecting people's specific knowledge, understanding, as well as observational and experimental information about their living environments, as well as skills and technology to design a lifestyle in that specific environmental context. Thus, Traditional knowledge contains know-how, skills, practices, abilities, and innovations that can be found in several contexts and are the result of intellectual work in a traditional environment including technical, agriculture, scientific, ecological, and medicinal knowledge as well as biodiversity-related knowledge.

India and Traditional Medicinal Knowledge

Traditional therapies are often used for fulfilling the needs of primary health care in the developing world. Small groups of people are safeguarding their lives against incurable diseases using traditional ways passed down from their fathers or grandfathers and passed down to the next generation. Ayurveda, Siddha, Unani, etc., are based on the traditional healthcare system.² Ayurveda is a system of traditional medicine originating in the Indian subcontinent and practiced as a form of alternative medicines in various parts of the world. Medicinal plants such as Aloe, Amla, Ashok, Neem, Turmeric, Tula, Ginger, Pepper, etc., are found in India, and they are used by people from all sections. Traditional medicinal plants contain components that assist in the treatment of human diseases.

The World Health Organization (WHO) defines traditional medicine as “the total of the knowledge, skills, and practices based on the theories, beliefs, and experiences indigenous to different cultures, whether explicable or not, used in the maintenance of health, as well as in the prevention, diagnosis, improvement or treatment of physical and mental illnesses”.³ Traditional medical knowledge is generally linked to genetic resources, such as the use of herbs for medicinal purposes. Genetic resources are biological materials found in nature that are not the result of human innovation and so cannot be protected as intellectual property (IP). Sharing the benefits of Traditional Knowledge and protecting it has been a concern both at the international and national levels. A basic element of traditional knowledge – including traditional medicine is solely found in ‘tradition’ or ‘culture’ only to the extent that its formation and application are considered as a part of the cultural traditions of the community.

Spending more time in nature and observing plants and herbs is one method to grasp the principles of Indian Ayurveda. Each plant or herb has its distinctive properties which can be availed to treat a variety of ailments and disorders. Traditional knowledge has played and continues to play an important role in the vast majority of people’s daily lives. In India, the traditional Ayurvedic medical system is used by around 70% of the rural population.⁴

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India's Battle for Traditional Knowledge

The existing IP system is insufficient to safeguard TK since it is based on individual private property rights, whereas traditional knowledge is created and owned collectively. Furthermore, under the current IP system, the term "protection" denotes that the owner of the IP has a legal right to prevent others from using or replicating it. This is in direct opposition to the TK notion. Indigenous knowledge is commonly shared within social groups; therefore we may claim that there is an inherent distinction between present IP protection and TK protection. One could say that the existing patent system serves solely the economic interests of individuals who have tinkered with traditional knowledge, leaving out the entire community that has brought it to this point. Apart from that, the existing IP system lacks a community patent, which might be utilized to safeguard society's collective knowledge. Because there are no standards for communal patents, the topic of who can hold Traditional Knowledge-based patents as well as how the benefits of such patents should be dispersed among those in society who are the genuine owners of that knowledge has arisen. The principles of novelty, utility, non-obviousness, and industrial application, which are used to grant patents, cannot be used to grant positive protection to TK. TK lacks the idea of originality because it has been passed down through generations. Traditional knowledge is created through a process of trial and error. Also TK as such may not be having any commercial application, it indeed requires certain changes. As a result, we can see that the current patent system is incapable of protecting TK because the two notions are fundamentally different. For the protection of TK, a *sui generis* system (of its kind), which provides for sustainable use and benefit-sharing, is essential.

The issue of traditional knowledge protection between developing and developed countries is contentious. As developing countries have the majority of traditional knowledge and developed countries want to exploit it in innovative ways. Traditional knowledge has been lost due to centuries of prejudice, exploitation, dispossession, and colonization. For several reasons, foreign firms have patented Indian products such as the neem tree, tamarind, turmeric, and Darjeeling tea.



The protection of traditional medicinal knowledge is many times based on several cases involving misappropriation by unauthorized third parties, who have patented compounds derived from traditional medicines without the prior consent of traditional medical knowledge holders and fair compensation.⁵ When indigenous people's knowledge is exploited for commercial advantage without obtaining permission from the knowledge's owner and without compensating them is termed as bio-piracy. Bio-piracy occurs when patents are applied unfairly to genetic resources and traditional knowledge. Theft or usurpation of genetic materials, particularly plants and other biological elements, through the patent process is known as bio-piracy. Examples of patents based on traditional Indian medicine have included the use of turmeric for healing wounds, the anti-fungal properties of neem, and a diabetes medicine made from the extract of Jamun, these are known as bio-piracy based on Indian medicinal plants. Bio-piracy of TK from India has already been documented in several cases. The most well-known cases of TK misappropriation from India are shown below:

Neem Patent Case

Neem is a South and Southeast Asian tree grown in the regions of Asia. It's well-known for its use as natural medicine, insecticide, and fertilizer. Since the ancient period, neem twigs have been utilized as antibacterial teeth brushes. Neem compounds can also be utilized to fight a variety of parasites and fungal infections that impact crops; oil extracted from Neem can also be used to treat the common cold, and it is used to aid with malaria and a variety of skin disorders. A tree legendary to India, from its roots to its spreading crown, the Neem tree contains several potent compounds, notably a chemical found in its seeds named azadirachtin.⁶ The barks, leaves, flowers, seeds of the neem tree are used to treat a variety of diseases ranging from leprosy to diabetes, skin disorders and ulcers.⁷

W.R. Grace and the US Department of Agriculture were the first to file a patent for Neem with the European Patent Office. The patent in question is for a technique of controlling fungi on plants that involve contacting the fungi with a Neem oil formulation. In 1994, the patent was granted by the European Patent Office.⁸ In 1995, a team of international non-governmental organizations (NGOs) and



Indian farmers brought a lawsuit challenging the patent.⁹ According to traditional Indian ayurvedic literature, hydrophobic compounds of neem seeds have been studied and used in India for centuries, both for treating dermatological disorders in humans and for protecting agricultural plants against fungal infestations. The patent was cancelled by the EPO (European Patent Office) due to a lack of innovation, inventive steps, and relevance to the prior art.

Turmeric Patent Case

Turmeric is a ginger-like plant with rhizomes that are used as a flavour in Indian cooking. It also contains qualities that make it a good medicinal ingredient, for cosmetics, and other products. It is used as a medicine to treat wounds and rashes. The United States granted the University of Mississippi Medical Centre a patent on turmeric¹⁰ in 1995 for its wound-healing properties. The Council of Scientific and Industrial Research (CSIR) filed a re-examination suit with the United States Patent and Trademark Office, claiming that the patents were invalid due to “prior art.” Turmeric has been used to heal wounds and rashes for thousands of years, according to the CSIR, and its usage as a medication is not new. The patent office upheld the CSIR’s objections and cancelled the patent, alleging that the discoveries claimed by the inventors were known in India for centuries and that there was no novelty. This case was considered a turning point because it was for the first time a TK-based patent was successfully challenged.

Basmati Rice Patent Case

Rice is a staple grain grown in most Asian countries, including India, Nepal, and Pakistan. Over a hundred different types of rice have been developed, fostered, and protected by farmers in this region for generations to suit diverse tastes and demands. Rice Tec was given a patent by the US patent office for a breed of Basmati rice,¹¹ fragrant rice that has been grown in India and Pakistan for millennia. The firm claims to have created “new” Basmati lines and grains that “enable the production of high-quality, higher-yielding Basmati rice throughout the world.” Only three of the 20 claims in Rice Tec Inc.’s original patent application were appealed by the Indian government. Only

assertions about some qualities of basmati rice were being contested (specifically starch index, aroma, and grain dimensions).¹²

According to Article 27.3(b) of the TRIPS Agreement, Plant varieties cannot be protected by patents. It merely requires countries to enact legislation to safeguard plant variety in some way (not necessarily through patents). However, since the United States is a strong supporter of patent protection for plant varieties, the patent application was granted. Rice Tec's three strains have been granted patent protection, allowing them to call its rice 'Superior Basmati Rice'. As a result, in the Basmati case, Rice Tec modified the breed by crossing it with a Western breed of grain and subsequently claimed it as their invention, and the case is an illustration of TRIPS' challenges with patenting biotechnological methods.¹³

All of these cases highlight the significance of TK as prior art and the importance of effective prior art identification for intellectual property systems to work properly. Because the petitioners were able to produce certain evidence relating to prior publication of qualities of turmeric and Neem, the patents issued in these cases were invalidated. Prior art refers to any publicly available content that existed before the filing date of a patent application. Normally, before granting a patent, the concerned patent office's role is to conduct a thorough search for prior art. Oral TK which has been passed down over the years may not be available in a systematic and organized record. Furthermore, even if it is documented, it may be recorded in the local language, making it difficult for international patent offices to access. Only documented knowledge is considered prior art under the current IP scheme. This opens the door to erroneous patents for commercial products based on indigenous populations' knowledge.

Traditional Knowledge Digital Library for the Protection of Traditional Knowledge

Traditional Knowledge Digital Library (TKDL) is a pioneering initiative of India to protect Indian traditional medicinal knowledge and prevent its misappropriation at International Patent Offices.¹⁴ The issue of bio-piracy and unethical bioprospecting made headlines after the government of India successfully revoked or limited turmeric and basmati rice patents granted by the United States Patent and Trademark Office (USPTO) and the neem patent granted by European Patent



Office (EPO) in the late 1990s more such patent claims came to light. The difficulty with Indian traditional knowledge is exacerbated by the fact that it is written in languages such as Sanskrit, Hindi, Arabic, Urdu, Tamil, and other historic local dialects that are no longer in use. As a result, patent examiners at overseas patent offices are unable to access or comprehend the published Indian TK literature.¹⁵

Traditional Knowledge Digital Library has conquered language and format barriers by converting and structuring the available contents of ancient writings on Indian Systems of Medicine, such as Ayurveda, Siddha, Unani, and Sowa Riga, as well as Yoga, into 5 major languages known around the world, namely English, Japanese, French, German, and Spanish, using information technology tools and an innovative classification system known as Traditional Knot. More than 3.6 lakhs formulations/practices have been transcribed into the TKDL database as of the date. Traditional Knowledge Digital Library is termed as a tool for prevention of misappropriates traditional knowledge as it provides access to non-patent literature database on traditional knowledge of India. The TKDL database will provide information on modern as well as local names in a language and format understandable to Patent Examiner and it also serves as a link between formulations existing in local languages and a Patent Examiner at a global level. TKDL is proven to be an effective preventive mode against bio-piracy, and it has been praised as a unique effort around the world. The purpose behind TKDL is to prevent incorrect patents from being granted by allowing patent examiners access to TK-related previous art without restricting the use of traditional expertise. According to a report of WIPO, with the help of TKDL, India has successfully managed to protect around 0.226 million medicinal formulations, that too at zero direct cost.¹⁶ The TKDL has enabled the cancellation or withdrawal of a large number of patent applications attempting to claim rights over the use of various medicinal plants.¹⁷ Thus, it is worth highlighting that the TKDL serves a significant role in reducing bio-piracy, as states such as the United States, Canada, Japan, China, etc., increasingly use the TKDL before issuing patents based on traditional knowledge.

Conclusion

It's worth noting that the IP industry has recognized the necessity of successful documenting of indigenous TK, such as India's TKDL,

which plays a defensive role within the pre-existing IP system. Inventions established through genetic resources, whether relating to traditional knowledge or not can be protected through the grant of a patent or with an effective sui generis system. When patents are given based on Indian medicinal plants or traditional knowledge in developed countries, the authorities issuing the patents must first review the Traditional Knowledge Digital Library to ensure that traditional or indigenous people's rights are not violated.

Notes

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17. Ibid.

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About the Book

The book's theme is absolutely crucial considering the current political and economic climate, which has led to widespread unease throughout the world. The prominent professionals and other stakeholders have addressed these issues and offered remedies for the collective benefit.

Every society is carried with the help of culture but culture cannot stand alone and is seen side by side with law. They both have an influence over each other in every way as all civilizations have their own cultures according to which their laws are being formed. Only a politically awakened legislature sensitive to its surroundings can synchronise a cultural society with a rich heritage with legal realities. The main aim of the law is to address the issues of cultural and ethical diversity and it cannot be said successful till it's putting advancements in the rich circumstances of its human dynamics. The flourishing instances in a society can be weighted on the basis of its equilibrium between its law and its culture.

Amity Law School, Noida is taking this initiative to provide an opportunity to the intellectuals by publishing a book titled "Neoteric Vision of Culture, Ethics and Heritage Towards Human Dynamics." The book will address varied issues so as to inculcate the understanding and expand the horizon beyond reductive views of the laws. It is to understand the philosophy and to evaluate how law, culture, and ethics fit into the way people behave today.

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