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An Analysis of Traditional Knowledge: Its Protections, Issues and Suggestions for ensuring protection

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ABSTRACT

Traditional knowledge is the knowledge, skills, and practices that are established, maintained, and within a community, passed down from generation to generation and which are often integral to the community's cultural or spiritual identity. Because indigenous people have protected and maintained most of the world's biodiversity, traditional knowledge must be preserved in order for the environment to be conserved and developed sustainably. It is critical to be aware of genetic resources and other bio-resources in order to preserve and conserve them. Bio-piracy lies at the base of the dilemma of traditional knowledge protection. Bio-piracy occurs when traditional knowledge is commercially exploited without the consent of the indigenous or local peoples who own the knowledge. India needs to embrace a balanced and diverse strategy as it moves forward in the twenty-first century to become a global area. The marginalized and vulnerable indigenous populations, which make up about 10% of the total population, play an important role in this regard. Their ancestors' expertise can be used to infuse the ethics in a variety of areas. In post-covid 19 circumstances, where the world is rapidly depleting its natural resources, promoting traditional knowledge (TK) could become an endeavour for their regeneration. This paper discusses the basics of traditional knowledge, how it can be protected, international conventions and role of intellectual property rights with respect to traditional knowledge.

Keywords: *Traditional Knowledge, Intellectual Property Rights, Protection, Indigenous People, CBD, Indian.*

I. INTRODUCTION

Intellectual property rights ("IPR"), as we all know, is the creation of the mind for example inventions, names, symbols, geographical indications, designs and other artistic and literary work. IPR is of many types, like, trademarks, copyrights, patents, geographical indications, plant varieties, designs and others. Traditional knowledge, too, is a form of IPR. Traditional

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knowledge ("TK") is a type of knowledge or a skill that is developed or passed on from generation to generation within a community, hence making it a part of their history, culture and spiritual beliefs.[2] It forms a part of their traditional livelihood which acts as their guardian. It can be of agricultural, environmental, medicinal, cultural (stories, songs, dance etc.) or any such knowledge. Its inclusion may contribute to a modern society's knowledge base, both in India and outside. India has a long history of culture and civilization, as well as a vast reservoir of TK. Although contemporary technology has mostly overtaken most industrial processes, TK remains valuable owing to its environmentally benign, time-proven technology, techniques, and background culture. Traditional knowledge safeguards all intellectual creations made by forefathers and cultivated over generations in the fields of science, technology, the environment, healthcare, agriculture, and biodiversity. TK is employed to conserve the population and its culture, as well as the genetic capital required for the community's long-term existence.

Listed below are some of the areas mentioned where traditional knowledge is productively used:[3]

- ***Medicinal and Healthcare system:*** Ayurveda and Yoga originated in India. Yoga is a method of uniting the body, mind, and spirit via good thinking, lifestyles, body postures, and workouts that originated in India. Yoga is the foundation of nearly all Indian origin religions and groups, such as Hinduism, Jainism, and Buddhism. The balance of three elemental energies in the body, namely *vata* (air), *pitta* (water), and *kapha* (phlegm) is the basis of Ayurveda. Herbs, metal extracts, workouts, and other techniques are primarily used. We have a large number of ancient books about Ayurveda, both particularly and in general. Ayurvedic information can also be found in the Sushruta Sanhita, Charak Sanhita, Atharva Veda, and other classics.
- ***Artistic work (Madhubani Painting):*** Madhubani painting, also known as Mithila painting, is a type of painting that is created using the hands, matchsticks, pen nibs, and twigs, and is estimated to have started during the Ramayana period. Paints made from natural ingredients are typically obtained from trees. The painting depicts weddings and other

[2] Vatsala Singh, IPR Vis- à- Vis Traditional Knowledge, available at https://www.mondaq.com/india/patent/743482/ipr-vis--vis-traditional-knowledge

[3] Ranjan, P., & Singh, B. K. (2020). Conservation of Traditional knowledge in India and Need of Knowledge Networks. First International Conference on Bridging Traditional Knowledge to Modern Science - 2020 (5 pp). Mau (Uttar Pradesh): Dr. Abhay Singh Memorial College & Tamsa Shakuntala Surya Nath Gramm Vikas Sanstha (TSSGVS)

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special occasions. The paintings are embellished with sketches of animals, birds, and greenery. It is also brilliantly made on many clothing in India.

- ***Agricultural:*** In the farms, crops such as *dheincha* and sun hemp, which take 30-40 days to grow, are planted for compost, and Darjeeling tea, with its distinct flavors, was found indigenously.

II. REASON FOR WHY PROTECTION OF TRADITIONAL KNOWLEDGE IS IMPORTANT

The necessity to preserve traditional knowledge has developed over time, especially in order to avoid unlawful and commercial use of such information. It is critical to safeguard indigenous peoples from such extinction while also assisting them in the preservation of historic rituals. The term "protection" is used for many different contexts depending in what purpose it is to be used. It refers to, in law, as the tool and basic principle to avoid and for the protection of unauthorized use of traditional knowledge by the party other than the owner.the principle aim of the term "protection" is to make sure that traditional knowledge is not used in any wrongful manner. IP rights and its protection helps to achieve this aim and hence protects TK by providing remedies. The protection of TK must also encourage its widespread and efficient usage. The most critical analysis of the status of the world's nature was published in 2019 by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES). It stated to governments that human activities were threatening the extinction of 1 million plant and animal species, based on 15,000 sources. It discovered that nature was deteriorating at unparalleled speeds in human history.

Indigenous peoples with traditional knowledge of how to protect nature, on the other hand, were recognised as vital to the future protection of global biodiversity. They are typically better positioned than scientists to give knowledge on local biodiversity and environmental change, and they play a vital role in biodiversity governance at all levels, from local to global.[4] The following are the primary justifications for awarding TK protection:

- equitable considerations[5]
- conservation concerns
- the preservation of traditional practices and culture
- the prevention of unauthorized parties exploiting TK components, and

[4] John Vidal, Why Indigenous people and traditional knowledge are vital to protecting future global biodiversity, available at https://ensia.com/features/indigenous-knowledge-biodiversity/

[5] Carlos Correa, "Traditional Knowledge and Intellectual Property: Issues and options surrounding the protection of traditional knowledge", 35 (3rd Ed., November 2001).

- Promotion of its usage and value in development.

III. IPRS ROLE IN THE PROTECTION OF TRADITIONAL KNOWLEDGE

Traditional knowledge's most difficult component is its preservation. Traditional knowledge has been the subject of much debate under the IP regime, but this poses a number of challenges, including:

a) which IP can traditional knowledge be protected under, and

b) how will traditional knowledge be protected indefinitely, given that every IP protection is offers only for a limited period of time.

The demand for traditional knowledge protection, a part of IPR, exploded onto the world stage with the signing of the Convention on Biological Diversity (CBD) in 1992. Article 8(j) of the Convention provides a comprehensive definition of traditional knowledge, which says:

"Traditional knowledge refers to the information, innovations, and practices of indigenous and local societies around the world.[6] *Traditional knowledge is passed down orally from generation to generation, based on centuries of experience and adaptations to the local culture and environment. Stories, music, folklore, proverbs, cultural values, beliefs, rituals, community rules, local language, and agricultural techniques, including the development of plant species and animal breeds, are examples of collectively owned knowledge."*[7]

There are two types of Intellectual Property (IP) protection sought for traditional knowledge:

- Defensive protection, aimed at preventing others from acquiring intellectual property rights to traditional knowledge. For example, India has built a searchable database of traditional medicine that patent examiners can use to evaluate patent applications as evidence of prior art. Defensive tactics may also be used to prevent sacred cultural manifestations, such as sacred symbols or words, from being registered as trademarks.
- Positive protection in which communities are given rights to promote their traditional knowledge, govern its uses, and profit from its economic use. Some traditional knowledge applications can be protected under the current intellectual property system, and a number of countries have passed specific legislation to that effect.[8]

Unlike other categories of IPR, India has no substantive act or law to protect TK, but other IP

[6] Saba, Traditional Knowledge – The India Story Till Date; Protecting Traditional Knowledge – the India story till date, available at https://www.scconline.com/blog/post/2018/04/23/protecting-traditional-knowledge-the-india-story-till-date/

[7] *Ibid*

[8] WIPO, Traditional Knowledge and Intellectual Property, available at http://www.wipo.int/pressroom/en/briefs/tk_ip.html

acts include provisions relating to traditional knowledge, such as the Patents Act, 1970, Sections 25 and 64, which lists traditional knowledge as one of the grounds for revocation of a patent application. The Copyright Act of 1957 does not specifically mention safeguarding traditional cultural, literary, or artistic work or folklore, but S.31A does. However, Copyright protection is for a limited time period and also requires certain requirements to be met, thus TK protection under this IP is limited. [9]

(A) Patents

Indian law contains proper safeguards for traditional knowledge. Because conventional knowledge is in the public domain by definition, any patent application relating to it will not be considered an invention under Section 2(1)(j) of the Patents Act, 1970, which states that an invention is "a new product or method requiring an innovative phase and capable of industrial use." The Patent Act of 1970, which is the source of the innovation in dispute, includes provisions requiring TK to be declared. The source and geographical origin of every biological material used for the invention must be disclosed in the specification, according to Section 10(4)(ii)(D) of the Act.

(B) Traditional Knowledge Digital Library (TKDL)

The former Planning Commission of the Central Government established a "Task Force on Conservation and Sustainable Use of Medicinal Plants" in June 1999. One of its goals was to find ways to make it easier to protect "patent rights and intellectual property rights of medicinal plants." One of the Task Force's recommendations was to establish a library to ensure the collection of traditional knowledge on a single platform that is digitally accessible and useful in demonstrating to the world that traditional medicinal knowledge associated with India is prior art, and that patent applications based on such knowledge will not meet the criteria for novelty.[10] As a result, a database of India's traditional knowledge was created. TKDL is a database of about 2,50,000 compositions used in Ayuveda, Siddha, Unani, and Yoga schools of Indian traditional medicine. TKDL is a pioneering Indian attempt to prevent misuse of the country's traditional medical knowledge at international patent offices, on which more than 70% of India's population relies for healthcare and millions of people rely for their livelihood.[11]

(C) Traditional Knowledge Resource Classification (TKRC)

[9] Vatsala Singh, IPR Vis- à- Vis Traditional Knowledge, available at https://www.mondaq.com/india/patent/743482/ipr-vis--vis-traditional-knowledge

[10] Prashant Reddy T., Sumathi Chandrashekaran, Create, Copy, Disrupt: India's Intellectual Property Dilemmas, 271 (Oxford University Press 2017).

[11] Traditional Knowledge Digital Library, available at http://www.tkdl.res.in/tkdl/langdefault/common/Abouttkdl.asp?GL=Eng

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TKRC is a more advanced classification method based on the TKDL. TKRC divided the Indian traditional medical system into about 25,000 subgroups for Ayurveda, Unani, Siddha, and Yoga. The TKRC has allowed the inclusion of approximately 200 sub-groups under A61 K 36/00[12], as described in the International Patent Classification, rather than a few previously available sub-groups on medicinal plants under A61 K 35/00, thereby raising the bar for the search and review of prior art in patent applications involving traditional knowledge.

(D) Sui Generis Law

There is a need to create an international mechanism to conserve traditional knowledge. Local protection of TK holders' rights through country level sui-generis regimes, including customary laws and others, could be part of such an international framework. Sui-generis is a term that refers to something that is unique or unusual. Various governments have adopted existing intellectual property systems to the needs of traditional knowledge holders through sui generis procedures in an effort to expand protection to TK. For the protection of TK and genetic resources, a Sui-generis system could have certain typical types of IP protections supplemented with alternative forms of protections, or none at all. Local communities must develop a working partnership with the intellectual property office if any country has approved a Sui-generis law. These intellectual property agencies can help secure locally held knowledge by privately maintaining innovations or registers. If the knowledge on which a patent application is based is already in the registry, this intellectual property office can deny it.[13]

Unless the knowledge is already in the public eye, anyone interested in gaining access to a community's biological resources or knowledge for scientific, commercial, or industrial purposes would need to obtain the prior informed consent of the indigenous peoples who possess the knowledge in question under a sui-generis system and according to the Convention on Biological Diversity. If consent is obtained, the individual desiring to access traditional knowledge, indigenous peoples' lands, or a protected area's biological resources and knowledge associated with them must show proof of consent to the intellectual property authority or appropriate authorities.

[12] Medicinal preparations of undetermined constitution containing material from algae, lichens, fungi or plants, or derivatives thereof, e.g. traditional herbal medicines, see https://www.wipo.int/classifications/ipc/en/ITsupport/Version20170101/transformations/ipc/20170101/en/htm/A61K.htm

[13] S. Kalaskar B., Traditional Knowledge and Sui-Generis Law (2017), International Journal of Scientific & Engineering Research Volume 3, Issue 7, July ; ISSN 2229-5518

IV. INTERNATIONAL CONVENTIONS/ REGIMES WITH RESPECT TO TRADITIONAL KNOWLEDGE

(A) Convention on Biological Diversity (CBD)

The Convention on Biological Diversity (CBD) was signed on June 5, 1992. It was negotiated in Rio de Janeiro in 1992 under the auspices of the United Nations Environment Programme (UNEP). The CBD, which is governed by the United Nations Environment Programme (UNEP), establishes standards for environmental conservation while ensuring continued economic growth, with a focus on biodiversity conservation, sustainable use, and fair distribution of revenues from the use of hereditary assets. The CBD also recognises the importance of traditional genetic asset utilisation in the long-term preservation of biological diversity. It establishes the right to exploit biological transfer from developing nations and emphasises that IPRs must not obstruct biodiversity conservation and sustainable usage.[14] Provisions relating to promotion, establishment of trade, and utilisation of indigenous and traditional information and machinery are also incorporated into the CBD's plan.[15]

(B) WIPO - World Intellectual Property Organization

WIPO has been conducting programmes to investigate developing intellectual property concerns since 1998. It includes commissioning a study on customary law and regulatory systems that apply to the protection of traditional knowledge; commissioning a feasibility study on the use of intellectual property law or practise to protect informal knowledge; and hosting an annual Round Table on the protection of traditional knowledge for holders of traditional knowledge. WIPO's work on traditional knowledge focuses on three distinct but interconnected areas:

- traditional knowledge in the strict sense (technical skills, practises and innovations related to, say, biodiversity, agriculture, or health);
- traditional cultural gestures of folklore (cultural manifestations such as music, art, designs, symbols, and performances); and
- genetic resources (genetic material of actual or potential value found in plants, animals and micro-organisms).[16]

[14] Daniel Gervais, "The Trips Agreement: Drafting History and Analysis", 4th Ed. (Sweet & Maxwell), 2012.
[15] G Chin Khan Muan, "Traditional Knowledge and Convention of Biological Diversity", available at http://www.aippfoundation.org/R+ID/TK%20&%20cbd.pdf.
[16] Traditional Knowledge and Intellectual Property – Background Brief, available at https://www.wipo.int/pressroom/en/briefs/tk_ip.html

V. General issues relating to the conservation of traditional knowledge

To protect traditional knowledge, several proposals have been made in the current IPR framework. Because of the multiplicity of traditional knowledge, such solutions are not sufficiently explicit on the question of protection. As a result, before considering how traditional knowledge may be safeguarded, it is necessary to define a need for traditional knowledge protection, which may include a variety of factors such as equity concerns, conservation concerns, the preservation of traditional practices and culture, and the prevention of unauthorized parties appropriating components of traditional knowledge. The problem of bio-piracy is at the base of TK protection. Bio-piracy occurs when traditional knowledge is commercialized without the consent of the indigenous or local people who own the information. In our diverse system, there are over 7000 species of medicinal plants and over 15,000 medicines based on herbal compositions. Furthermore, because to increased awareness of the negative effects of allopathy, traditional wisdom is gaining global attention and patronisation. This has not only increased the popularity of traditional knowledge systems, but it has also rendered the indigenous system vulnerable to bio-piracy and patenting, both within and outside the country of origin.[17]

Conventional knowledge is generally associated with natural assets and is typically an ineffable part of such a natural reserve. TK has the potential to be transformed into commercial benefits by providing a procedure/indication for developing beneficial procedures and processes for the benefit of mankind. The creators or owners of such TK should receive a portion of the proceeds. India currently lacks a precise *sui generis* statute to protect such TK and folklore, but is in the process of developing one.

VI. Landmark cases

(A) The Neem case

The neem case sparked a controversy that may be considered a "first" for India, and cast doubt on an ostensibly "tight" patent system, when a patent was granted to a business called W.R.Grace. The company was granted a patent in the United States and the European Union for a formulation that maintained the active element in the neem plant safe in the storage of azadirachtin; it chose azadirachtin for its pesticidal qualities. Neem tree antiviral and antibacterial characteristics, also known as the "curer of all ailments" in Sanskrit, are

[17] Aritra Ghosh, Traditional Knowledge: Problems and Prospects, available at https://www.researchgate.net/publication/315046340_Traditional_Knowledge_Problems_and_Prospects

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recognised by traditional medicine systems such as Ayurveda and Unani, and are recommended for the treatment of skin problems and as a natural insecticide. The applicant recognised that the pesticidal uses of neem were well known, and he noted that preserving azadirachtin for a longer period of time is problematic without the usage of neem. The applicant was only allowed the exclusive right to employ azadirachtin in the specific storage system detailed in the patent, according to the US patent granted. The patent's grant sparked outrage, and it was contested in the United States Patent and Trademark Office (USPTO) and the European Patent Office (EPO), respectively, through re-examination and post-grant opposition proceedings. While the USPTO was unsuccessful, the European Patent Office upheld the opposition, finding that the issued patent lacked invention and creativity.[18]

(B) The Basmati Rice Case

Ricetec was granted a patent for cultivating rice crops, generating crops with similar traits, and recognising rice using the Starch Index test. The corporation claimed that its patent protected a new type of basmati that was superior to prior versions. It was contended, with regard to the use of the geographical indicator 'Basmati,' which the phrase is not generic in nature to the Indian subcontinent and has taken on a general meaning through nomenclature such as American Basmati, Thai Basmati, and so on. It went on to say that the term "Basmati" does not imply a geographical place and therefore falls under the category of "public domain." [19] As a result of this enterprise misinforming the public about different and inferior goods, India and Pakistan's export markets suffered. Under pressure from non-governmental institutions (NGOs), the Indian government filed a re-examination application in 2000, claiming that the rice lines in issue lacked originality and originality. The USPTO only granted 5 claims out of 20 in response to the request in 2001, and the title of the invention was modified from "Basmati Rice Lines and Grains"10 to "Rice Lines Bas 867, RT1117, RT1121."

(C) The Turmeric Case

Turmeric is a tropical herb grown in India's east. Turmeric powder is widely used in India as a medication, a food ingredient, and a dye, to mention a few applications. It's utilised as a blood purifier in the treatment of the common cold and as an antiparasitic in the cure of different of skin infections. It's also a key element in a variety of Indian dishes. The University of Mississippi medical centre received a patent for wound healing rights on turmeric in 1995 from the United States. The claimed topic was the use of "turmeric powder and its administration"

[18] IPR vis-a-vis traditional knowledge, available at https://blog.ipleaders.in/ipr-vis-vis-traditional-knowledge/
[19] Jayashree Watal, Intellectual Property Rights in the WHO and Developing Countries, The Hague (2001) 272-73.

for oral and topical wound healing. It was given the sole right to sell and distribute the product. The Indian Council for Science and Industrial Research (CSIR) had filed an objection to the patent's award and supplied documented proof of previous art to the USPTO. While it is a well-known fact that turmeric has been used in every household in India for centuries, locating documented knowledge on the use of turmeric powder for wound healing via oral and topical routes has proven to be a monumental task. There were 32 references in several languages, including Sanskrit, Urdu, and Hindi, as a result of comprehensive research. As a result, the USPTO cancelled the patent, claiming that the claims were obvious and expected, and that the application of turmeric was an ancient art of wound treatment. As a result, in this case, the TK that belonged to India was protected.

VII. SUGGESTIONS FOR THE PROTECTION OF TRADITIONAL KNOWLEDGE

India has a long history and a diverse range of cultures, ethnic groups, and languages. The following actions are required to preserve the TK:

Conserve as many historical texts and other sources of knowledge as possible.

a) Expand knowledge and social networks, with an emphasis on bringing in as many TK individuals as possible.

b) The use of traditional knowledge as an alternative to current science and technology

TRIPS is the most essential agreement because it is the only part of the WTO that can carry out member countries' promises. To combat bio-piracy, a comprehensive reform of the global intellectual property framework is required, including necessary amendments to the TRIPS Agreement, which codifies the principles for international intellectual property security. Three principles should be included in TRIPS in order to avoid bio-piracy[20]. They are as follows:

- Disclosure of the geographical origins of biological tools, as well as any accompanying traditional knowledge.
- To obtain the informed agreement of the affected local community.
- Assuring that benefits are distributed in an equitable manner.

Traditional IPR programmes have some flaws that make it difficult to provide comprehensive protection to TK and its owners. If someone develops a piece of traditional knowledge and creates innovation within a certain range, innovation will be realised, and the owner of the intellectual property will have no legal obligation to share any of the benefit with the traditional information's original holders. Despite these limitations, it is difficult to offer overall protection

[20] *Supra note* 18

for traditional knowledge, including traditional medicine, under present intellectual property laws. The IPR system's primary policy goal should be to "safeguard indigenous rights." IPRs can only then be utilised to protect the country's cultural assets and traditional knowledge. Indigenous peoples are uninformed of their biological abilities and the scientific rights that come with them. Because of the high level of literacy, time, and money required to register IPRs, it is highly improbable that these indigenous peoples will do so, leaving the field open for third parties to claim rights to their land and related knowledge. Traditional communities should be made more aware of IPRs, bio-piracy, profit sharing, and the security of TK through awareness campaigns.

VIII. CONCLUSION

Knowledge is power, and traditional knowledge has enormous promise for solving man's nascent challenges. Exploiting this knowledge is critical, but it must be done in tandem with its protection, promotion, and benefit sharing. While TK is a vital resource that must be utilized to bring about economic progress, it is also the cultural backbone of every country. However, in order to achieve socio-economic peace, it is critical that the delicate balance between protecting indigenous groups' rights and the profits deriving from the commercialization of such TK not be disrupted.

To put it another way, the informal sector's knowledge system, i.e. traditional knowledge, is frequently oral and poorly documented, making it non-defensible[21]. India has taken a step forward by creating a repository of its centuries-old knowledge, which is updated on a regular basis, but the need for a legal instrument on a global scale is becoming increasingly essential. The question of relevance is how to connect ancient knowledge systems with a modern IPR framework.

A *sui generis* law is frequently proposed as a possible solution for proper protection of traditional knowledge; however, policies and ideas such as the National IP Policy, Digital India, and Startup India can help to save the rapidly fading system of traditional knowledge until such legislation is formulated. It is not unreasonable to believe that, in order to ensure the future of species and humanity, the current generation will be required to assist in the preservation of a vanishing generation's valuable knowledge.

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[21] V.K. Gupta, An Approach for Establishing a Traditional Knowledge Digital Library, 5 JIPR 307 (2000), available at http://nopr.niscair.res.in/bitstream/123456789/26010/1/JIPR%205%286%29%20307-319.pdf