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Review of National and International Standards for the Protection of Traditional Knowledge in Medicinal Plants

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ABSTRACT

Traditional Knowledge or indigenous knowledge plays a significant role in the lives of indigenous people throughout the world. Such indigenous knowledge subsists in many areas, such as, food preparation, dressing, traditional dance, medicinal plants and treatment of diseases and so on. Such knowledge contributes immensely in the day to day life of the indigenous people and in many parts of the world this is the only sources for most of the indigenous family's livelihood. With the development of science and technology and rapid growth of trade and commerce, such indigenous knowledge has become a subject matter of exploitation in the hands of industrialists and traders and hence, the requirement of legal protection of such knowledge arises. Particularly traditional knowledge in medicinal plants are being exploited to a huge extent without recognizing the contributions of the originators. This paper is an attempt to review the existing national and International standards to highlight whether the existing standards are sufficient to afford protection or something more is required to be done.

Keywords: *Traditional Knowledge, Indigenous Knowledge, Medicinal Plants, Protection.*

I. INTRODUCTION

Indigenous knowledge is an extraordinary wellspring of data to the native social orders and have created in occurrence with nature in a long haul of hundreds of years and moved starting with one individual then onto the next by training and occupation. Its consideration may improve the knowledgebase of an advanced society including India what's more, abroad. Indian culture and human advancement is extremely old and it has huge load of indigenous knowledge. Despite the fact that, present day innovation has supplanted most extreme innovation of assembling measures, indigenous knowledge is still obvious due to eco-accommodating time demonstrated innovation, practices and foundation culture. Present day S&T has profited ability hugely, however it likewise needs a cultural system to examine and

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tackle the issues previously made in type of contamination and deteriorating society. Indian ventures were in solid structure before the British system and saw declination because of hefty tariffs, coming about loss of occupations and loss of indigenous knowledge. It is immense and noticeable in expressions, horticulture, creature cultivation, fishery and countless callings yet. The so evolved knowledge in such a long term is more close to the nature and capable of sustainable development. There are various examinations on indigenous knowledge framework in India. UNESCO, WTO, UNCTAD and so on have uncommon considerations to get profits by such knowledge. Traditional Knowledge is scattered in the general public among individuals in the customs where profiting the general public in compatibility to nature was the prime goal. Individuals with explicit traditional knowledge were not keen on getting efficient advantages and set it into a business, as we see the current use arrangement of knowledge where learned are essential for a business framework run by finance managers. Students in old framework were instructed morals to utilize the knowledge. Propriety of the student is above all else what's more, a learned don't move his insight without affirming the lesson of its students, hence in some cases such information is lost in the general public particularly in current settings. As per World Intellectual Property Organization (WIPO), "Traditional Knowledge (TK) is information, ability, abilities and practices that are created, supported and gave from one age to another inside a local area, regularly framing part of its social or profound character.[2]"

Meaning of Traditional Knowledge:

According to Johnson, Traditional Knowledge or indigenous knowledge is

- -is recorded and sent orally
- is learned through perception and hand-on experience
- depends on the agreement that the components of issue have a day to day existence power
- doesn't see human existence as better than other enliven and lifeless components however that all living things have family relationship and reliant
- is comprehensive as opposed to reductionist
- is natural as opposed to insightful, and basically subjective instead of quantitative
- depends on information produced by asset clients themselves as opposed to particular gatherings of scientists.
- depends on diachronic instead of synchronic information.

[2] Dr. Prabhat Ranjan, *Conservation of Traditional knowledge in India and Need of Knowledge Networks*, RESEARCHGATE (May 13, 2021, 10:48 AM), https://www.researchgate.net/publication/339076877_Conservation_of_Traditional_knowledge_in_India_and_Need_of_Knowledge_Networks

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- is established in a social setting that sees the world as far as friendly and otherworldly relations between all living things, and
- infers its clarifications of natural marvels from combined, aggregate and regularly profound encounters. Such clarifications are checked, approved, and amended day by day and occasionally through the yearly pattern of exercises."

It is obvious from the meaning of TK and citations over that indigenous knowledge are a piece of social and social character and created in quite a while inside the social orders natively. It changes starting with one local area then onto the next and one district to another. On the off chance that any utilizable method or information is being looked through it is urgent to apply them practically speaking moreover[3].

Significance of Traditional Knowledge:

Traditional Knowledge or indigenous knowledge is significant to the society in much aspect. Some of the significant areas are:

1. It is diverse and its large coverage includes all the subjects i.e. arts, social sciences, natural sciences and technology.
2. It is back bone of a culture which was being run on such knowledge. TK has created and nurtured belief and traditions in the history of a society.
3. Large part of TK has not been recorded and therefore not transmitted to the society.
4. Practices and teaching of TK is different than modern sciences and vulnerable to be lost.
5. India has indigenous knowledge base of tribes who have very ancient culture and living methods.
6. Traditional knowledge is eco friendly and supports sustainable growth of the society.
7. TK is being lost steeply after people shifting to other occupations that were engaged in the same (Maundu, 1995).
8. TK is expected to get great loss due to endangered indigenous languages in the world (Marrie)[4].

II. SCOPE OF TRADITIONAL KNOWLEDGE:

TK is widely dispersed in all knowledge spheres including arts, sciences and technology. Generally words of mouths are media of propagation of it. India has very old history and large

[3]https://www.researchgate.net/publication/339076877_Conservation_of_Traditional_knowledge_in_India_and_Need_of_Knowledge_Networks (Last visited on 07-05-21 at about 12:13 Pm.)
[4] Ibid.

number of books has been lost due to attacks of invaders in different period. Tribes of India have their own culture developed in a long term of history and still they are using TK in their life and works. Such knowledge may be helpful as a substitute or complement to modern S&T. Some of important areas where our TK is resourceful, are described below:

a. **Medicines and Health Systems:** India is birth place of Ayurveda and Yoga. Yoga has been originated in India which is a means of integrating body, mind and soul with healthy thinking, lifestyle, body postures, exercises etc. Although it has been spread throughout the world at present, however its significance has to be more expanded between people. Yoga has been base of almost all Indian origin religions and sects including Hinduism, Jainism and Buddhism etc. Ayurveda is based on the balance of three elemental energies in the body i.e. vata (air), pitta (water) and kapha (phlegm). It uses primarily herbs, metal extracts, exercises etc. We have numerous old books specifically and in general depicting about the Ayurveda. Sushruta Sanhita, Charak Sanhita, Atharva Veda and several epics also contains knowledge of the Ayurveda. India is a very vast country and people have different practices to cure different diseases, which needs scientific collection and dissemination for study and applications. Ayurveda uses easily available plant and animal products, therefore accessible to all people and very useful in cure of chronic diseases. Turmeric, onion, 'doob' grass like commonly available materials are used for curing external injuries from long time which needs minimal costs (Mishra et al, 2011). Ayurveda has been established as a discipline; however, TK has immense capacity to add into the same.

b. **Textiles:** India was good exporter of cotton and silk clothes which was destroyed due to heavy taxes by the British Government after use of machines for productions in Great Britain. Large numbers of families were engaged in this work in different states in India which lost their jobs. Indian clothes were high quality and some families are engaged in their works up to today. Banarasi sarees, Kancheepuram silk and cotton of Balaramapuram Handlooms are good examples of it. TK of such clothes are very important for Indian industries and also for further study.

c. **Metal technologies:** The Iron pillar of Mehrauli near Delhi is very old and it has no rust. This proves quality of metal technologies in India in that epoch. It had also techniques of making good quality swords and sculptures.

d. **Folk materials:** India has large number of dances which have diversity in respect of the subjects, clothes, expressions and instruments used. Some of those have been described in books but some could not be recorded due to vividness.

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e. **Agriculture:** Crop like dheincha and sun hemp which are cultivated in 30-40days, are cultivated for compost in the farms, are example of traditional knowledge. Crops of turmeric, potato and chilies if compositely sown give more productions. Products of some plants and animals are used for more yield and protection of some specific crops. Livestock is also managed by different methods (Mishra et al, 2011). Darjeeling tea with its specific tastes was discovered indigenously.

f. **Rainwater harvesting:** In several parts of India with low water rains, there are systems to store rainwater for future use. Step wells, taankas (Western Rajasthan), johad (a type of dam in Rajasthan), zabo (impounding water in North East India), surangas (Kerala), bamboo drip irrigation (North East India) were constructed to conserve rain water for future use.

g.**Madhubani Painting:** Madhbani painting or Mithila painting is done using hands, matchsticks, pen nibs, twigs etc. believed to be originated in the Ramayana period. The natural products are used for paints usually obtained from trees. Marriages and different occasions are subject of the painting. Sketches of animals, birds and plants are used to elaborate the paintings. It has three styles based on castes. It is beautifully designed on different clothes also in India[5].

III. REVIEW OF INTERNATIONAL STANDARDS FOR PROTECTION OF TRADITIONAL KNOWLEDGE IN MEDICINAL PLANTS

Practitioners of traditional medicine or holders of traditional medicinal knowledge have expressed a wide range of views and needs in relation to the protection of such medicine or knowledge. This section will review those needs and the applicability of the principal intellectual property instruments proposed for the protection of traditional medicine and traditional medicinal knowledge. Finally, this section will review discussions on the development of sui generis protection system for such medicine or knowledge. Far from starting from a clean slate, there has been a great deal of discussion about the protection of traditional knowledge, including traditional medicine, through the Intellectual property system. The protection of traditional knowledge, including traditional medical knowledge, arises under Article 8(j) of the Convention on Biological Diversity. The issues surrounding the protection of traditional knowledge generally, and the implementation of Article 8(j) of the CBD specifically, have been extensively discussed in WIPO, in the context of the Convention on Biological Diversity, By the Secretariat of the WTO, and by the United Nations Conference on

[5] Dr. Prabhat Ranjan, *Conservation of Traditional knowledge in India and Need of Knowledge Networks*, RESEARCHGATE (May 13, 2021, 10:48 AM), https://www.researchgate.net/publication/339076877_Conservation_of_Traditional_knowledge_in_India_and_Need_of_Knowledge_Networks

Trade and Development. The discussion continues in WIPO through the newly established Intergovernmental Committee on Intellectual Property and Traditional Knowledge, Genetic Resources, and Folklore, which meets for the first time April 30-May 2, 2001. Moreover, several WTO Members have submitted documents to the Committee on Trade and Environment and/or the Council for Trade-Related Aspects of Intellectual Property Rights relating to the protection of traditional knowledge. Further, some of the communications received by the General Council of the WTO from WTO Members in connection with preparations for the 1999 WTO Seattle Ministerial Conference dealt with the protection of traditional knowledge[6].

IV. NATIONAL STANDARDS FOR PROTECTION OF TRADITIONAL MEDICINAL KNOWLEDGE

India has not brought out any Traditional Knowledge specific legislations but measures have been adopted by India such as Biodiversity Act, 2002 and Protection of Plant variety and Farmers Right Act, 2001 and the Patent (Amendment) Act, 2005 to give effect to its obligations under the TRIPS agreement, CBD and International Treaty on Plant Genetic Resources for Food and Agriculture 2004. TTPGRFA has reiterated India's stand in different intergovernmental bodies working on the protection of Traditional Knowledge. In India, preparation of village-wise Community biodiversity Registers (CBRs) for documenting all knowledge, innovations and practices has been undertaken in a few States.An exercise has been initiated to prepare to easily navigate computerized database of documentation Traditional Knowledge relating to use of medicinal and other plants, known as Traditional knowledge Digital Library (TKDL). Such digital database would enable Patent Office's all over the world to search and examine any prevalent use or prior art, and thereby prevent grant of patents and biopiracy. In India provisions have been made for protecting Traditional knowledge in Biodiversity Act 2002, Protection of Plant varieties and Farmer's rights (PPVFR) Act, 2001 and Patent (Amendment) Act, 2005.

The Biological Diversity Act, 2002[7]

The Biodiversity Act 2002 primarily addresses access to genetic resources and associated knowledge by foreign individuals, institutions or companies, to ensure equitable sharing of benefits using out of the use of these resources and knowledge to the country and the people.

[6] Ibid.

[7] Saeema Farooq, *Legal Framework On Protection Of Traditional Knowledge: A Review*, RESEARCHGATE (May 13, 2021, 10:48 AM), https://www.researchgate.net/publication/331221999_LEGAL_FRAMEWORK_ON_PROTECTION_OF_TRADITIONAL_KNOWLEDGE_A_REVIEW.

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The Act stipulated norms for the access to biological resources andTraditional knowledge based in three ways 22-26:

1. Access to biological resources and Traditional Knowledge to foreign citizen, companies and NRI based on "Prior approval of National Biodiversity Authority,"
2. Access to Indian Citizens, companies, Associations and Organizations registered in India on the basis of "Prior intimation to the State Biodiversity Board", concerned, and
3. Exemption of prior approval or intimation for local people and communities, including growers and cultivations of biodiversity, vaids and hakims, who have been practicing, indigenous medicines.

There is no requirement under the legislation for seeking permission of the National Biodiversity Authority for Carrying out research, if it is carried out in India by Indians, as well as under the collaborative research projects that have been drawn within the overall policy guidelines formulated by the Central government. The only situation that would require permission of the NBA are (i) when the results of any research which has made use of the country's biodiversity is sought to be commercialized (ii) when the results of the research are shared with a foreign institution or individual wants access to the country's biodiversity for under taking research. The Act, subject to Section 21 and Rule 20 of the Biodiversity Rules, insists up on including appropriate benefit sharing provisions in the access agreement and mutually agreed terms related to access and transfer of biological resources or knowledge occurring in or obtained from India for commercial use, bio-survey, bio-utilization or any other monetary purposes. The Authority shall develop guidelines and shall notify the specific details of benefit sharing formula in an official gazette on a case-to-case basis. The time frame and quantum of benefits to be shared shall be decided on case-to-case based on mutually agreed terms between the applicant, authority, local bodies, and other relevant stakeholders, including local and indigenous communities. One of the suggested mechanisms for benefit sharing includes direct payment to persons or group of individuals through district administration, if the biological material or knowledge was accessed from specific individuals or organizations. In cases where such individuals or organizations could not be identified, the monetary benefits shall be paid to the National Biodiversity Fund. Five percent of the benefits shall be earmarked for the Authority or State Biodiversity Board towards the administrative service charges.

The Protection of Plant Varieties and Farmers Rights Act, 2001(PPVER)

The PPVFR Act 2001 and the PPVFR Rules 2003, deal primarily with the protection of plant breeder's rights over the new varieties developed by them and the entitlement of farmers to

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register new varieties and also to save, breed, use, exchange, share or sell the plant varieties, which the latter have developed, improved, and maintained over many generations. The Act is a deviation from the 1991 UPOV Model and can regarded as an alternative 'sui generis' system that accord protection of the rights of the formal innovations of a plant breeder and informal knowledge system and traditional plant varieties of the farmers as well. The important provisions contained in this Act relevant to ABS are those on the protection of farmer's rights and the mechanisms suggests for compensation or benefit-sharing for the contributions of local communities or farmers in the development of a new variety. The Indian legislation on PPVFR is the singular attempt made by a developing country to give effect to the concept of Farmers' Rights as provided for in the International Treaty. Although this act has several limitations, it nonetheless provides a model of an effective sui generis system for protection of plant varieties that WTO members are expected to put in place in fulfillment of their commitment to the Agreement on TRIPS[8].

The Patent (Amendment) Act, 2005

India has utilized the flexibility of TRIPS in the Patent (Amendment) Act, 2002. This Amendment has introduced a new obligation (in Section 10 (4) of the principle (1970) Act, which stipulates the requirements of a patent application) on the patent application, when used in an invention. Such a provision is perfectly compatible with TRIPS, since, it is not violating other provisions of this Agreement. The Patents (Amendment) Act 2005, passed by the parliament recently has also introduced some important provisions. Dealing with the post-grant opposition further stipulates that at any time after the grant of patent but before the expiry of a period of one year from the date of publication of grant of patent, any person interested may give notice of opposition to the Controller in the prescribed manner on certain specified grounds. The eleven grounds stipulated for such post-grant opposition include the following two grounds, That the complete specification does not disclose or wrongfully mentions the source and geographical origin of biological material used for the complete specification was anticipated having regard to the knowledge, oral or otherwise, available within any local or indigenous community in India or elsewhere. These two provisions ensure protection of the rights of the source country of a biological material or traditional knowledge of local or indigenous community, and thereby enabling recognition and reward of source countries and traditional knowledge holders through appropriate benefit sharing mechanisms Thus, provisions included in the Indian Patents Act in conjunction with the PIC and benefit sharing

[8] Ibid.

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requirements incorporated in the Biological Diversity Act 2002 create sufficient room for combating the biopiracy threats at the national level in India. Nevertheless, the problem remains that existence of a similar protective shield for Indian bioresearches Traditional Knowledge cannot be guaranteed under the national patent laws of other countries. The Agreement does not make it obligatory for the member countries to include in their respective patent laws provisions aimed at protecting the bio-resources and Traditional Knowledge of the country of origin against biopiracy. However, the protection of these precious assets cannot be guaranteed until and less certain compulsory provisions are included in TRIPS in this regard, which all the Member countries would be obliged to comply with[9].

V. CONCLUSION

Holders of customary information may follow the techniques depicted above and draft what's more, record patent applications to look for patent insurance for developments. Three limitations might be distinguished in this regard. In the first place, most customary information counting customary clinical information is old and doesn't meet the prerequisites of curiosity and creative advance. Second, customary information is held by and large there is certifiably not a solitary individual or discrete gathering of people that can be recognized as an "creator" in whose name the application might be recorded. Some idea has been provide for standard law which is talked about further, underneath could interface with patent laws to impact an assurance of "inventor ship." Third, the intricacy and cost of drafting also, arraigning patent applications is outside that which holders of conventional information can oversee and bear. Every one of these requirements was distinguished by WIPO truth be told finding missions directed in 1998 and 1999 on the licensed innovation needs and assumptions of holders of customary information. Public and local patent frameworks can be unforgiving if the prerequisite of oddity or on the other hand creative advance isn't met, a patent will not be granted.44 Thus, if the development for which insurance is looked for has been recently revealed, the innovation needs "oddity" also, a patent will not be allowed. Worries in this regard have been raised about the distribution of aftereffects of scholastic examination in regard of customary phytomedicines and the impact of such distribution on the capacity of holders of customary information to look for what's more, acquire patent assurance.

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[9] Saeema Farooq, *Legal Framework On Protection Of Traditional Knowledge: A Review*, RESEARCHGATE (May 13, 2021, 10:48 AM), https://www.researchgate.net/publication/331221999_LEGAL_FRAMEWORK_ON_PROTECTION_OF_TRADITIONAL_KNOWLEDGE_A_REVIEW