Impact of Traditional Ecological Knowledge in the Contemporary Time

Rohit Moonka*

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ABSTRACT

Traditional knowledge is that set of knowledge, which indigenous communities have developed through empirical study of the nature and environment; here empirical study is the operative term. Therefore, the amalgamation of anthropology and botany led to the development of a new area of expertise, which is known as Traditional Ecological Knowledge. This branch of study has become extremely significant due to certain essential factors involved in the antiquity of information and direct experience. In furtherance of this, TEK serves as a crucial tool for climatic improvement. TEK's necessity has been acknowledged only in the contemporary world due to a drastic transformation in the global scenario. This paper aims to analyze the distinction between scientific knowledge and TEK. The world is under an imminent threat of global warming; this has become one of the primary causes to give precedence to TEK over other areas of study. Globalization, on the other hand, has led to the loss of ecological imbalance in the modern era this includes loss of flora and fauna as well as habitat of the indigenous communities. Therefore, it is imperative to study the cause and effect of globalization and global warming.

The adversity brought forth by the technological expansion has become the prime reason to contemplate over the lack of protection being conferred over TEK. The primary objective of this paper is to bridge the gap between expansion and geography through legitimate means that are neutral and benefiting all interested stakeholders. One of the

* Assistant Professor (Senior Scale), Campus Law Centre, Faculty of Law, University of Delhi, Delhi. Email: rohitmoonka@gmail.com

major challenges is non-documentation of such myriad expanse of traditional & cultural know-how, TEK is a part of intangible property belonging to a community, therefore, no documentation per se exists it is a mere verbal form of knowledge being passed on to lineal generations. There are several deficiencies of TEK that weakens its protection vis-à-vis other intangible property rights, thus, a more stringent regime is required to fulfill the lacunae concerning TEK.

This paper objectively studies the cases that have corroborated the significance of traditional knowledge in this era, including incidents wherein the indigenous communities have been successful in predicting natural disasters. The pressing concern of the indigenous communities is loss of their resources which are intrinsically linked to their survival The need of the hour is to address these issues through channelizing the various forms of traditional knowledge. For this the world needs to break away from the myth that traditional knowledge is only connected to cultural expression and folklore. TEK can become a lucrative source of data if we accumulate the environmental proficiency under one umbrella and strive for its conservation. The laxity over TEK has resulted in massive decline in the biosphere, this paper aims to put forth plausible solutions to eradicate intervention by developed countries and enumerate ways to aid sustainable use of traditional knowledge.

Keywords: *Traditional Knowledge, Traditional Ecological Knowledge, Globalization and Global Warming.*

I TRADITIONAL KNOWLEDGE AND TRADITIONAL ECOLOGICAL KNOWLEDGE

The primitive man was an all-rounder; he was an expert in diverse areas of life. There was no specialized skill set, therefore, humans developed expertise through experiences, thereby creating a niche area of intellectual property called Traditional Knowledge.[1] Traditional knowledge essentially means the instinctive knowledge acquired by an indigenous community through empirical study, which has been passed down to generations, but the knowledge has remained in the same community.[2] The amusing aspect of traditional

1 "Introduction to Traditional Knowledge, Convention on Biological Diversity", available at: https://www.cbd.int/traditional/intro.shtml (visited on August 24, 2023)

2 "Climate Commons – Traditional Ecological Knowledge", available at: www.climatecalcommons.com

knowledge is that the generational transmission always contributed to enhancement of the existent knowledge. Encounters with ecology led to epistemological enhancement of existing knowledge, communities have found ways to predict natural calamities, so to be prepared with premeditated response and for safeguarding their life.[3]

This area of traditional knowledge solely dealing with the environment and natural is called Traditional Ecological Knowledge (hereinafter referred to as "*TEK"*). The concept of TKE is still at a very nascent stage, astonishingly contrary to the amount of time that has lapsed since its inception and growth. Primarily, there are two aspects to traditional ecological knowledge deliberated upon in this paper – one is pertaining to the how Traditional Ecological Knowledge is one of the finest resources for information relating to the environment, and second, the TEK will be rendered obsolete in the near future due to the adverse effects of globalization.

Traditional Ecological Knowledge is not well documented and this is one of the major drawbacks of this domain of knowledge. But it doesn't change the fact that this collection of data is one of the finest sources available in the contemporary era to gather intelligence on any type of environmental concern. Take for instance, the knowledge regarding Non-Timber Forest Product (hereinafter referred at NTFP) by the local harvesters proved to be more substantial than the data acquired through scientific study. To add to its credit, TEK proved to be more extensive in terms of expertise regarding the management of NTFP, its long-term perspective, and it even contradicted some scientific information.[4] This makes it evident that TEK is not only cultural mumbo-jumbo but has legitimate accreditations attached to it.

Another very significant illustration of TEK as a source of information for prospective environmental casualties is the tribes being able to predict the dreadful tsunami in Andaman & Nicobar based on the tidal waves, the currents and such types of usual activities. Similarly the indigenous communities residing in specific areas are able to make predictions through past experiences, one such experience would be the rainbow yardstick if the rainbow appears on the east there would be drought, if it appears on the west then certainty of rainfall.[5] It is commendable that these tribes have maintained their knowledge through centuries and have aided in providing a comprehensive insight to ecological behavior.

(visited on August 27, 2023)

3 "What is traditional Ecological Knowledge", available at: https://www.igi-global.com/dictionary/traditional-ecological-knowledge-tek/42564 (visited on August 27, 2023)

4 "Ecology and Society, The Use of Traditional Ecological Knowledge in Forest Management: an Example from India", Vol. 15 No.1 Art. 3, (March, 2010)

5 "Protection and management of natural disasters through Indigenous Knowledge, with special reference to fisheries, Indian Journal of Traditional Knowledge", Vol. 10 (1), pp. 167-172 (January 2011)

In light of the above illustrations, it is well established that the indigenous tribes possess an impeccable understanding of their surrounding which transcends even technological advancements. But on the other end of the spectrum, it is apposite to mention that there exists no proper mechanism to constructively use this knowledge, which leads to its redundancy. In fact, to point out until very recently, even the traditional knowledge *per se* was not being protected and it was only in the hindsight of the Turmeric case[6] that the AYUSH ministry felt the urgent need to consolidate a document to prevent Traditional Knowledge patents, though it has proved to be quite beneficial, the unnecessary delay in codification has led to many patent approvals in different jurisdictions. Therefore, the crux of the contention is that we need a special mechanism to deal with traditional ecological knowledge which cannot be seen within the limited frames of traditional knowledge and intellectual property. The massive rewards of arrangement of TEK will only be felt in the near future when the depletion of environment has reached its optimum limit and with an imminent threat to mankind.

II EFFECTS OF GLOBALIZATION AND GLOBAL WARMING

It is pertinent to acknowledge that TEK is being trivialized not only through non-documentation but also through technological evaluations; it will be validated at some point in time that scientific intelligence cannot supersede natural proficiencies.[7] For now, our main concern is Globalization and global warming and theur effects on TEK. There have been numerous instances wherein large-scale exploitation has led to a diminution of resources. For instance, in the Chiton depletion, the species are now almost extinct due to its rampant use in traditional medicine.[8] The crisis occurs when the market becomes the threshold for traditional knowledge retail and the resources are reduced to this level. This is just one case but on a general note, the damage which is being caused by the rampant use of traditional ecological knowledge resources is extremely high.

Global warming, on the other hand, has made sure that the indigenous communities are deprived of biological resources. This includes bio-resources like fuel, etc. which are being extracted on such an abnormally high rate. It is apposite to mention that TEK, essentially, holds the key to Climate change: as they are the collective guardians of a huge chunk of world's resources. They are excellent analysts of the climate forecast and they also

6 Reg Chengappa, "The Haldi Battle", available at: http://indiatoday.intoday.in/story/patents-india-wins-a-victory-over-turmeric-but-the-war-is-on/1/277014.html (visited on August 28, 2023)

7 "The Human Brain v. Computer", available at: https://medium.com/m/globalidentity?redirectUrl=https://journal.thriveglobal.com/the-human-brain-vs-computers-5880cb156541 (visited on August 29, 2023)

8 "Chiton Depletion and Traditional Knowledge", Vol 88 No. 3, pp.247-249 (July 2007)

dominate the traditional usage of the plant variety arena, to say the least.[9] Thus, it becomes an obligation to protect the ecology and the traditional ecological knowledge for the evolution of mankind.

In this regard, one can only hope that the significance of traditional ecological knowledge is felt in all its intensity especially because it gives an insight into sustainable development, *inter alia*. There are enough evidences available to *prima facie* establish that Traditional ecological knowledge is one of the most lucrative sources for development and advancement. It then becomes our duty to restrict the depletion and misappropriation of TEK through a robust mechanism that facilitates access to the resources, while maintaining a stringent prohibition on misuse. Moreover, it is ideal if the scientific knowledge is clubbed with the traditional knowledge to grasp various characteristics of environmental conduct.

III DOCUMENTATION AS MEANS OF PROTECTION OF TRADITIONAL KNOWLEDGE

Documentation of Traditional Knowledge and Traditional Cultural Expressions has gathered extreme attention from governments and various cultural organizations lately. The scope of such attention is not just limited to the previously mentioned stakeholders, but even the members of Indigenous Peoples and Local Communities (IPLCs) have not only started paying heed to the process of such documentation, but this kind of a response has led to weighing the value of Traditional Knowledge and Traditional Cultural Knowledge in terms of economics.[10] Recent advancement in technology, has in fact made documentation of traditional knowledge less tough and has simultaneously, vouched for the spread of such process. The World Intellectual Property Organization (WIPO) does not further the concept of documentation of TK and TCEs in a personal capacity, but instead encourages the governments of member states to create infrastructures to store traditional information for those social foundations and customary overseers who wish to archive traditional knowledge and traditional cultural knowledge.[11]

The Indian Government, with an imperative to protect its traditional knowledge from being exploited, has created since 2001 its Traditional Knowledge Digital Library (TKDL). Initially, the TKDL stored mainly the information with regard to the medicinal properties of

9 "Why Traditional Knowledge Holds Key to Climate Change", available at: https://unu.edu/publications/articles/why-traditional-knowledge-holds-the-key-to-climate-change.html (visited on August 30, 2023)

10 "Documentation of Traditional Knowledge and Traditional Cultural Expression", available at: www.ipo.int/edocs/pubdocs/en_wipo_pub_tk_9.pdf (visited on September 03, 2023)

11 *Id.*

a plethora of plants and their varieties. It is a systematized bunch of data about the cures of the most imperative frameworks of customary drug: Ayurveda, Unani, Siddha and Yoga.[12] To set up the Library, specialists, interpreters and researchers have studied in depth the details, uses and mode of administration of such medicinal plants (more than 200.000 events in 150 books) contained still in their original copies with messages in Sanskrit, Urdu, Arabic, Persian and Tamil.[13] The plants mentioned are, to date, 291 in number and treat 186 illnesses. The information can be accessed in five languages: English, German, French, Japanese and Spanish.[14]

Such frameworks to create a database of traditional knowledge protect the knowledge from being exploited by the pharmaceutical companies, whose only aim is to secure a patent in this regard to in turn earn enormous financial gains. This venture is ongoing and is the result of the efforts put in by the Indian Ministry of Health and Family Welfare, the Council of Scientific and Industrial Research (CSIR) and the Department of Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homeopathy (Dept. of AYUSH).[15] Municipal and International laws do not permit the protection of traditional information. Nevertheless, the traditional learning, for example, plants and their functions are still being usurped by corrupt players by protecting them in various nations. Documentation of primitive information, accordingly, is an essential part of safeguarding such traditional knowledge from being patented.[16]

The significance of documentation can be observed in the 'Turmeric Case' wherein a patent application number, CA2454171, was put forth by a US multinational firm, Metaproteomics Llc, at the Canada Intellectual Property Office. The application was titled "Curcuminoid syntheses". The patent application deliberated upon the uses of turmeric, apple, basil, kalamegha and licorice in treating psoriasis, gastritis and projected such information to be novel.[17] The Traditional Knowledge Digital Library (TKDL), a unit of Council of Scientific and Industrial Research (CSIR), in retaliation submitted a number of books from the eighteenth century to the twentieth century certifying that turmeric, apple, basil, kalamegha and licorice have been utilized alone or in blend with allied with other elements to treat

12 "Traditional Knowledge Digital Library", available at: https://tkdl.res.in/tkdl/LangDefault/Common/Home.asp (visited on September 4, 2023)

13 *Id.*

14 *Id.*

15 *Id.*

16 "Role of Documentation in Protecting Traditional Knowledge", available at: www.khuranaandkhurana.com/2015/04/20/role-of-documentation-in-protecting-traditional-knowledge/ (visited on September 7, 2023)

17 *Id.*

psoriasis, gastritis and contrary to the US multinational company, projected such information as common in the Indian frameworks of prescription. The books that helped India in retaining its traditional knowledge were: Khazaain-al-Advia, Muheet-e-Azam, Vaidyamanorama, RasayogaSagara, Rajanighantauh, Bhavaprakasa, Siddhabhesajamanimala and Ilaaj-al-Amraaz.[18]In the year 2002, internationally accepted guidelines were drafted for establishing Traditional Knowledge (TK) databases and registries. In light of this, the TKDL details were consequently framed which included traditional knowledge from China, Philippines, India.

IV CONCLUSION

TEK is crucial to human existence and it has evolved at the same pace as human evolution, unlike technology. Therefore, it is imperative that a proper consolidation of TEK is done for maintaining all the knowledge relating to ecology in one document. As there can be no Intellectual Property right which can be granted on TEK it becomes easy to transcend sovereign boundaries and come up with a magnificent document which can become the world's repository of TEK and can be accessed by anyone irrespective of their nationality as the environment is that arena which requires the world's attention and an unequivocal practice for preservation of this planet. In this regard further deliberations is required to be done.

It is quite evident from the acts of various organizations that their sole aim is to protect traditional knowledge to exact usage and consequently have an economic monopoly from such IP protection. However, the resultant of this could stand privy to the concept of unequal bargaining power between the MNCs and the communities who are the actual keepers of the traditional knowledge. Governments and their ancillary organizations have therefore, aimed to safeguard such information from wrongful exploitation.[19] This could only have been possible with the documention of such knowledge in digital libraries. Such storage of information, not only disallows any restrictive IP protection to traditional knowledge, but in fact provides the communities that have been thriving on such knowledge the recognition and financial assistance to improve further.

In the meantime, efforts to record traditional knowledge may also have an unwanted effect. The effect is with regard to possible worries that the process of documentation has made traditional knowledge broadly accessible to all, which can in all probability prompt

18 *Id.*

19 "The World Intellectual Property Organization Traditional Knowledge Document Toolkit", available at: http://www.wipo.int/export/sites/www/tk/en/resources/pdf/tk_toolkit_draft.pdf (visited on September 10, 2023)

misappropriation and utilization of it in ways which are certainly unfair. However, such worries shall rely on only peculiar conditions and must therefore, be looked into at a stage prior to the documentation of such information.

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