

SIGNIFICANCE OF TRADITIONAL KNOWLEDGE DIGITAL LIBRARY (TKDL) IN THE DOCUMENTATION AND PROTECTION OF TRADITIONAL MEDICINAL KNOWLEDGE

Written by Debabrata Roy

Assistant Professor, ICFAI Law School, ICFAI University, Tripura

ABSTRACT

Licensed innovation (IP) can be clarified as 'manifestations of the human psyche, which incorporates creation or age of some new and helpful things. Intellectual Property Rights (IPRs) are lawful rights administering such creations. Globalization, streamlined commerce and the patent system have made broad discussion in regards to the issues identified with insurance of traditional Knowledge (TK) and culture according to the Convention on Natural Diversity (CBD) and Trade Related Aspects of Intellectual Property Rights (TRIPS) understanding. The CBD rule suggests public sway over organic assets, commonly concurred terms and earlier educated endorsement for admittance to natural assets. Outings doesn't perceive these, however, communicates an ownership system and monopolistic intellectual protection. The Traditional Knowledge Digital Library (TKDL) is an interesting exclusive computerized data set that consolidates information especially identified with clinical science from different frameworks like Ayurveda, Unani, Siddha, and Yoga accessible in the public space. Data identified with medical services is being reported by filtering and ordering the data on customary information from the accessible writing existing in nearby dialects. This Article in attempt to analyse the significance of TKDL in the credentials and protection of traditional medicinal knowledge and way forward.

INTRODUCTION

The absence of appropriate and open documentation about traditional knowledge (TK) has been a reason for incredible drawback for the native individuals who have supported and safeguarded that knowledge for a long timeframe. Industrialists and researchers from across the world have taken advantage of this inadequacy and keep on doing so on the grounds that they have the pardon of saying that there doesn't exist any earlier workmanship which can legitimately keep them from thinking of developments, particularly in the drug field, which are intensely dependent on traditional knowledge. It has been expressed that the primary justification the abuse of traditional knowledge, otherwise called bio-robbery, is that indeed, even in the situations where certain type of documentation is accessible in those cases additionally there emerges the issue of the archives being in neighborhood dialects like Urdu, Tamil, Sanskrit and so on, making it exceptionally hard for the patent analysts to approach these reports and furthermore to play out their work proficientlyⁱ.

Between 1990 and 2000, several incidences of bio-piracy came to light – most importantly, patents on turmeric (No. 5,401504 in 1995) and basmati rice (No.5663484 in 1997) by the United States Patent and Trademark Office (USPTO), and patent on neem by the European Patent Office (EPO; No. 436257 in 1994). These experiences prompted the Government of India to formulate a task force which included experts from different sectors to prevent misappropriation of traditional knowledge (TK) at International Patent Offices. Traditional Knowledge Digital Library TKDL is a collaborative project among the Council of Scientific and Industrial Research (CSIR), Ministry of Science and Technology and Department of Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy (AYUSH), Ministry of Health and Family Welfare. TKDL depends on 150 books of earlier craftsmanship including the Indian framework of medication, accessible at an expense of around USD 1000. The TKDL information base is accessible in various global dialects, furthermore, in this manner is available to patent inspectors in their own mother tongue. TKDL contains examined pictures of therapeutic plans from old unique messages, yet doesn't have whole data present in the Indian frameworks of medication. TKDL is a powerful data set that is an extensive one, where plans will be continually added also, constantly refreshed by contributions from its usersⁱⁱ.

KEY FEATURES OF TRADITIONAL KNOWLEDGE DIGITAL LIBRARYⁱⁱⁱ

- Documentation of TK from ancient literature written in regional languages like Sanskrit, Hindi, Arabic, Persian, Urdu, Tamil, etc.
- Documentation of TK related to Ayurveda, Unani, Siddha and Yoga in digitized format.
- Available in English, French, German, Spanish and Japanese. In future, it would be available in 20 foreign languages and all Indian languages.
- Information included from 150 books (75 books on Ayurveda, 10 books on Unani, 50 books on Siddha and 15 books on Yoga) available in the public domain.
- Database contains 1200 formulations (500 Ayurvedic formulations, 500 Unani formulations and 200 Siddha formulations).
- Information on nearly 291 plants which are used as ingredients in these selected formulations, besides ingredients of animal or mineral origin. These formulations are in turn used to treat 186 diseases.
- Access to 2.5 lakh medicinal formulations is available to Patent Offices only under TKDL access agreement. Among them, 82,900 are from Ayurveda, 115,300 from Unani and 12,950 from Siddha.
- Database exists in 34 million A4- size pages.
- Inclusion of information on Yoga is under way. Nearly 900 Yoga postures from 14 ancient yoga books have been transcribed, and will be video graphed.

IMPACT OF TRADITIONAL KNOWLEDGE DIGITAL LIBRARY (TKDL)^{iv}

TKDL has been viewed as very supportive as far as its application in Europe is taken into thought. It is asserted that in its several a long time just TKDL had the option to help in

dismissing a day and a half patent application and up till 2015 out of 189 traditional knowledge in the European Patent Office, 17 were dismissed, 30 were considered removed, 31 were deserted and 21 were acknowledged. The staying 90 applications were getting looked at around 2016. As one can see from the numbers, TKDL doesn't appear to have an extraordinary achievement considering the way that an incredible number of patent applications were uncertain till 2016 and that too for an extensive stretch of time. Although, a gander at the EPO site shows that the greater part of them have been settled as of now however as referenced underneath there is at least one application which was recorded in 2008 however was under a magnifying glass up to this point. Also, it appears suitable to state now that the applications which were removed ought not be considered as a triumph for TKDL, on the grounds that there are situations where these removed applications go for reconsideration what's more, patent is allowed.

It has been set by the modeler of Traditional Knowledge Digital Library (TKDL), Mr. V K Gupta that TKDL has helped in spanning the language hole by deciphering traditional knowledge accessible in neighborhood dialects like Tamil and Arabic into universally perceived dialects like French, English, Spanish, Japanese, German. Thusly, over 0.226 million old definitions have been changed over into 34 million A4 size pages worth of information which is making a difference the patent inspectors in guaranteeing that nobody is equipped for exploiting locally protected and sustained customary knowledge. The guarantee is that this change has been done at nothing direct expense. The contention being that without TKDL the total cycle of patent denial is very since a long time ago drawn (five to seven years) and costly (US\$ 0.2-0.6 millions). Although, it strikes one that no information is introduced to considerably show that TKDL is in reality less tedious and costly. While there is some proof against the guaranteed effectiveness of TKDL, there being applications which have been recorded as right on time as 2008 and have not been settled till now, going even past the long term expressed for pre-TKDL time span. Other than this, there has been affirmation about the exceptionally powerful grouping device, TKRC as referenced previously. This device has been displayed on World Intellectual Property Organization's (WIPO) international Patent Classification (IPC). TKRC is viewed as incredibly important as it has partitioned information identified with Siddha, Yoga, Ayurveda and Unani into upwards of 27,000 sub-groups. Moreover, to having characterized traditional knowledge (TK) on its own, TKRC has likewise

helped in achieving changes to the IPC. Preceding 2005, IPC had just one sub gathering among its 8 areas of 70,000 sub-divisions each which took into account therapeutic plants. India raised this issue and accordingly a Traditional Knowledge Arrangement Taskforce was framed, having portrayal from China, United States of America, European Union, Japan and India. Accordingly, IPC presently has 207 sub-bunches which oblige restorative plants and it was additionally concurred that the 27,000 sub-gatherings of TKRC will be connected to IPC. A general summation of the effect would be that TKDL as a entire transforms TK into its cutting edge relationship make it simpler for patent inspectors to direct a quest for important earlier Article 8 from the abovementioned, it appears to be that other than a few issues of productive execution, TKDL as an thought has been critical thinking about its colossal commitment in bringing conventional information inside the standard, making it available at a overall scale. The issue is that the way in which TKDL has archived the TK is considered to be an off-base treatment of customary information at the grass root level. Furthermore, there are a few other material issues with the way in which TKDL is working as of now and the way in which patent workplaces across the world are reacting to it. These issues are expounded further in the coming areas of the paper.

BIO-PIRACY IN INDIA AND TKDL

In 2000, Council of Scientific and Industrial Research (CSIR) found that right around 80% of the 4,896 references to singular plant based therapeutic licenses in the United States Patents Office that year identified with only seven therapeutic plants of Indian beginning. After three years, there were just about 15,000 licenses on such meds spread over the United States, UK, what's more, different registers of patent workplaces. In 2005 this number had developed to 35,000, which obviously illustrates the interest of created world in the information on the agricultural nations. Advantageously, none of the patent inspectors are from agricultural nations, permitting a virtual free pass to taking traditional knowledge from the Old World^v.

Bio-piracy refers to a practice where traditional knowledge on nature originating from Indigenous people is used by others, for profit, without proper permission from and with little or absolutely no compensation or recognition to the indigenous people themselves. In other words, it can be described as the laid up practices of commercially exploiting naturally

occurring biochemical or genetic material, especially when patent is granted that restricts the further use of the material, while failing to pay any compensation to that material's native community^{vi}.

CASES ON BIO-PIRACY IN INDIA^{vii}

• **Turmeric:** The rhizomes of turmeric are used as a spice for flavouring Indian cooking. It also has properties that make it an effective ingredient in medicines, cosmetics and dyes. As a medicine, it has been traditionally used for centuries to heal wounds and rashes. In 1995, two expatriate Indians at the University of Mississippi Medical Centre (Suman K. Das and Hari Har P. Cohly) were granted a US patent (no.5, 401,504) on use of turmeric in wound healing. The Council of Scientific & Industrial Research (CSIR), India, New Delhi filed a re-examination case with the US PTO challenging the patent on the grounds of existing of prior art. CSIR argued that turmeric has been used for thousands of years for healing wounds and rashes and therefore its medicinal use was not a novel invention. Their claim was supported by documentary evidence of traditional knowledge, including ancient Sanskrit text and a paper published in 1953 in the Journal of the Indian Medical Association. The US Patent Office revoked this patent in 1997, after ascertaining that there was no novelty; the findings by innovators having been known in India for centuries.

• **Neem:** Neem extracts can be used against hundreds of pests and fungal diseases that attack food crops; the oil extracted from its seeds can be used to cure cold and flu; and mixed in soap, it provides relief from malaria, skin diseases and even meningitis. In 1994, European Patent Office (EPO) granted a patent (EPO patent No.436257) to the US Corporation W.R. Grace Company and US Department of Agriculture for a method for controlling fungi on plants by the aid of hydrophobic extracted Neem oil. In 1995, a group of international NGOs and representatives of Indian farmers filed legal opposition against the patent. They submitted evidence that the fungicidal effect of extracts of Neem seeds had been known and used for centuries in Indian agriculture to protect crops, and therefore, were unpatentable. In 1999, the EPO determined that according to the evidence all features of the present claim were disclosed to the public prior to the patent application and the patent was not considered to involve an inventive step. The patent granted on was Neem was revoked by the EPO in May 2000.

• **Basmati Rice:** Rice Tec. Inc. had applied for registration of a mark “Texmati” before the UK Trade Mark Registry. Agricultural and Processed Food Exports Development Authority (APEDA) successfully opposed it. One of the documents relied upon by Rice Tec as evidence in support of the registration of the said mark was the US Patent 5,663,484 granted by US Patent Office to Rice Tec on September 2, 1997. This US utility patent was unique in a way to claim a rice plant having characteristics similar to the traditional Indian Basmati Rice. It was challenged and later revoked by USPTO.

ROLE OF TKDL IN THE PREVENTION OF BIO-PIRACY

To guarantee the conventional knowledge isn't abused, CSIR under the chairmanship of Dr. V.K. Gupta went into a Memorandum of Understanding (MoU) with the Department of Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homeopathy ('AYUSH') under the Ministry of Health and Family Welfare of the Govt. of India. According to the Eleventh Five Year Plan, CSIR has been given the obligation of deliberately archiving conventional information utilizing books on Unani, Ayurveda and other medication frameworks accessible in the public space through existing literature. CSIR has started work and a significant bit of the conventional information has been fastidiously assembled into a computerized library in five famous dialects including Arabic, English, Spanish, Japanese and German. For digitization, CSIR utilizes a framework called Traditional Knowledge Asset Classification ('TKRC'), which incorporates around 5000 subgroups relating to therapeutic plants. This data is organized under segment, class, subclass, gathering and subgroup as indicated by the International Patent Characterization ('IPC'). Each refrain of the antiquated content is converted into the chose dialects prior to being ordered, utilizing the TKRC. CSIR from there on goes into MoUs with the patent workplaces of different countries to give them admittance to the advanced library. In this way, when licenses are applied for in the unfamiliar patent workplaces, they get screened through the TKDL. Patent inspectors use TKDL to guarantee that the applications that utilization a similar data are no granted licenses. Thus, endeavours at biopiracy whether purposeful or something else, are checked. Subsequently, if the patent so applied for is as of now part of conventional information in the TKDL or as such viewed as

earlier workmanship, the patent application is dismissed. All applications are gone through the TKDL to guarantee that they don't misuse customary information on India, in any style^{viii}.

Currently TKDL consists approximately 34 million pages in a patent application format on 270 thousand medicinal formations. The number of foreign patent attempts CSIR has thwarted is often cited as proof of this initiative's success. CSIR has claimed to have identified five thousand patent applications in International Patent Offices ('IPO') which seek to misappropriate India's traditional knowledge and has filed evidences for one thousand and seventy-three of these applications at the pre-grant stage while claiming that it has resulted in the withdrawal/cancellation of one hundred and thirty-seven patent applications. Sources within CSIR have revealed that over one-lakh formulations are yet to be added to the library as more of India's traditional knowledge becomes digitalised. It is also believed that CSIR desires to make the database available to publicly funded research organisations for further research in the field^{ix}.

CRITICISMS AGAINST TKDL^x

In spite of these victories, a few researchers have scrutinized the ebb and flow working of the MoUs just as the actual Library. These reactions remember the failure for the working of the library, its accessibility (or need thereof) to general society, just as the free access arrangements endorsed by the patent workplaces of different nations.

1. Shortcoming:

The principal analysis is established in the failure of TKDL. It was in the instance of patent application number EP1520585 that CSIR had mistranslated one of the fundamental ingredients. Mistranslation is a bumble with respect to CSIR as it would invalidate the actual point of advanced library and give an escape clause for patent applications to misuse. Mistranslation of fixings might be utilized as a protection just as forestall exploration and in this way licensing, of the mistranslated thing.

2. Community:

As per a few, the TKDL should be disclosed and open to all, to forestall the frequently utilized protection of obliviousness of a specific plan's 'earlier workmanship' status. In certain examples the safeguard has contended that the writing utilized by TKDL was inaccessible in the public space, and in this manner the application should not be dismissed. The worry that arises out of such contentions is the absence of mindfulness about conventional information frameworks of India. To forestall patent applications in any case rather than battling every single one of them, these native information frameworks should be so exposed, that licenses can't in any way, shape or form be applied for the obvious absence of novelty. The data sets made by China for example are accessible to people in general at the instalment of a charge and consequently forestalls bio-piracy. This basically guarantees that the possibility of such usurpation doesn't develop into a patent application in any case.

3. Free Access Agreements:

As a matter of fact, there is extension for development in the execution of the MoUs endorsed by CSIR. The greatest imperfection in the working of TKDL has been the idea of 'free access' arrangements, which basically permits global patent workplaces to abuse the data set made by CSIR without paying. The contention against such a framework originates from the way that by permitting global patent workplaces admittance to TKDL, CSIR is considerably improving the nature of licenses in these nations by propelling the nature of assessment itself.²⁸ Provided with broad data sets of what establishes traditional knowledge, patent workplaces across the world can now effectively dismiss contemptible patent applications, and along these lines reward the genuinely meriting petitioners. The other significant factor for thought is the monetary weight on the Government of India in making this information base. The Government has spent near seven crore rupees (starting at 2010) to set up this library and consequently, intelligently should anticipate a few re-visitations of this investment.²⁹ Other nations, for example, China have grown such a component and have made it accessible to people in general by charging a strong charge for access. TKDL's prosperity consequently is yet to be estimated in genuine terms-it should be quickly developed, after a cautious examination of the investigates given by academicians and clients the same. It holds huge potential to improve the

lives of numerous and whenever utilized properly, may truth be told potentially settle the misfortune of the lodge.

CONCLUSION

It is genuine that when we examined the analysis about customary traditional knowledge being treated as property, at that point around then the end is by all accounts that rather than putting unreasonable measure of assets into making an information base inside the property system it would be better if assets are utilized for the upliftment furthermore, improvement of the native networks so that they can utilize traditional knowledge all alone. The idea likewise being that assuming these networks are enabled, they can utilize the law to ensure themselves with no unreasonable legitimate mediation. As referenced over this ought not prompt a decision that TKDL overall ought to be dismissed, an endeavour ought to be made to guarantee that both these defensive powers work in congruity. Under the meaningful lawful issues, two particular ideas arise for improving the viability and authenticity of the TKDL framework. For adequacy it is significant that there ought to be a normalized comprehension of the term earlier craftsmanship across the different general sets of laws. While concerning authenticity the necessity is that copyright over the traditional knowledge which has been digitized under TKDL ought to be given due regard, the eminences which will build to individuals who ordered/interpreted the traditional knowledge in the primary spot will help them in facilitating research on conventional information. This way both TKDL will acquire authenticity and there will be stimulus for additional examination. In procedural issues, there is a need to improve the competency of the patent inspectors, and this ought not be restricted to conventional information related licenses. There are sure explicit pointers, as there is a need to guarantee that documentation for the reason of TKDL is finished with the most extreme earnestness to guarantee that data disarray isn't made on account of things like, helpless interpretation. Additionally, the candidate ought to have an additional commitment of advising about the geological beginning of the data on the premise of which her or his innovation has been created. One last idea from the procedural pundits is that the compensation of the patent inspectors ought to not be reliant upon the quantity of utilizations cleared and that they ought to be considered responsible if a patent has been allowed deceitfully. Another related change is that,

there ought to be precise record with regards to the cases in which the patent application has been considerably influenced because of an intercession which depended on the data got from TKDL. TKDL being founded on a shut admittance model, it is firmly proposed that it ought to be opened up for free as that will assist researchers with advancing their examination and will likewise assist candidates with knowing about the earlier craftsmanship in the field which they are working. Security concerns have been raised however they can be managed. Ultimately, the financial study was straightforward, that assets ought to be better overseen. The viable effect of a specific patent ought to be examined and as it were after that a test ought to be presented to it. This is the just other issue after the one about customary information being treated as property where one finds a tendency that TKDL overall was a poorly conceived notion. In total, it doesn't appear to be that it is basically sensible to recommend the rejecting of TKDL. It will be ideal if every one of the ideas are consolidated after a true attainability investigation. Likewise, as proposed previously notwithstanding TKDL (not instead of it) endeavours ought to be made for the upliftment of the native networks with the goal that they are equipped for self-determination^{xi}.

ENDNOTES

ⁱ Available at <http://nopr.niscair.res.in/bitstream/123456789/54320/1/JIPR%2024%285-6%29%20132-139.pdf> (Last visited on 21-05-21 at about 2:03 Pm).

ⁱⁱ Available at https://www.researchgate.net/publication/272483847_Traditional_Knowledge_Digital_Library_A_distinctive_approach_to_protect_and_promote_Indian_indigenous_medicinal_treasure (Last visited on 21-05-21 at about 12:50 Pm.)

ⁱⁱⁱ Ibid.

^{iv} Available at <http://nopr.niscair.res.in/bitstream/123456789/54320/1/JIPR%2024%285-6%29%20132-139.pdf> (Last <http://nopr.niscair.res.in/bitstream/123456789/54320/1/JIPR%2024%285-6%29%20132-139.pdf> visited on 21-05-21 at about 2:24 Pm.)

^v Available at https://www.researchgate.net/publication/41043855_Protecting_Traditional_Knowledge_Digitally_a_Case_Study_of_TKDL (Last visited on 22-05-21 at about 11:22 am)

^{vi} Available at https://www.researchgate.net/publication/322887897_TKDL_AN_ANSWER_TO_BIOPIRACY_IN_INDIA (last visited on 22-05-21 at about 11:33 am)

^{vii} Available at https://www.researchgate.net/publication/41043855_Protecting_Traditional_Knowledge_Digitally_a_Case_Study_of_TKDL (Last visited on 22-05-21 at about 11:40 am)

viii Available at <http://nujlawreview.org/wp-content/uploads/2017/01/2016-9-1-2-Abha-Nadkarni-Shardha-Rajam-Capitalising-the-Benefits-of-Traditional-Knowledge-Digital-Library-TKDL-in-Favour-of-Indigenous-Communities.pdf> (Last visited on 22-05-21 at about 11:56 am)

ix Ibid.

x Available at <http://nujlawreview.org/wp-content/uploads/2017/01/2016-9-1-2-Abha-Nadkarni-Shardha-Rajam-Capitalising-the-Benefits-of-Traditional-Knowledge-Digital-Library-TKDL-in-Favour-of-Indigenous-Communities.pdf> (Last visited on 22-05-21 at about 11:56 am)

xi Available at <http://nopr.niscair.res.in/bitstream/123456789/54320/1/JIPR%2024%285-6%29%20132-139.pdf> (Last visited on 22-05-21 at about 6:59 Pm.)

