

Traditional Knowledge and Patent Issues in India

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Abstract

The traditional knowledge of Indian products are more valuable than products in several other countries. This is because of the fact that India is the place where lots and lots of valuable resources are found and most of the products are an outcome of a historic traditional knowledge. The traditional knowledge of several products in India should be protected from being misused by other countries, and to get safeguarded against this fact India needs more updates in the field of patenting the Indian traditional knowledge. The traditional indigenous products and the indigenous culture of producing certain products of India should be successfully documented in such a way that they are not reachable for any other countries. Thus to protect our indigenous traditional knowledge from bio-piracy, there is a great need for a rigid legislative agenda in this regard.

Key Words:Traditional knowledge-valueless resources-misuse of TK-documentation- biopiracy.

1. Introduction

The traditional knowledge can be said as the knowledge of practice and the skills which have been developed or sustained and that which passed from generation to generation within a community which forms a part of its cultural or spiritual identity often. The innovations that are based on the traditional knowledge may be benefited by the trade mark, the geographical indication, the patent or it is being protected as a confidential information or even a trade secret. Though all these are prevalent nowadays, the problem is regarding the successful documentation of a traditional knowledge under Indian patent Act.

The Indian patent Act Protects the rights of indigenous people in the form of known traditional knowledge. After the enactment of new legislations in India regarding the traditional knowledge and protection of other indigenous products . Throughout the recent years there are certain issues in documentation of indigenous products and the traditional knowledge of Indian products are being patented in other countries and this finally leads to biopiracy of Indian traditional knowledge by other countries.

Innovations based on TK may benefit from patent, trademark, and geographical indication protection, or be protected as a trade secret or confidential information.

This paper aims to study about the protection given for traditional knowledge and to study the importance of traditional knowledge digital library and to study the cases regarding the misappropriation of traditional knowledge.

2. Methodology

The present research is, descriptive and conclusive. The study was conducted on secondary source of data books, articles, journals, e-sources, theories and the relevant provision with decided case laws.

3. Review of Literature

The life sciences industry has the potential to offer many innovative products for the betterment of society, especially in relation to healthcare. This has led many companies – both start-ups and large organisation to invest in the sector and implement measures to protect their innovative products and processes. Most innovations in the global life sciences industry relate directly to human health and therefore come under close scrutiny from both governmental and non-governmental bodies. This poses a number of challenges when protecting such innovations through patents. This article discusses some of the issues faced by patent applicants in the life sciences sector in India (especially for inventions related to drugs, medicines and vaccines), examines the relevant provisions of the Patents Act 1970 and describes the possible actions that applicants may consider to protect their innovations in the country.

Traditional knowledge (TK) has, for centuries, played an important role in the lives of indigenous peoples worldwide. ii Such knowledge constitutes a vital part of their cultural heritage, contributes to the sustainable use and preservation of biodiversity, and is fundamental to their sustainable development.iii However, there has been a growing recognition of the problems associated with the misappropriation and use of traditional knowledge for commercial (and other) purposes. In particular, the intellectual property system for patents and copyright has served to enable the taking and use of traditional knowledge by trans-national corporations, with little recourse or remedies available to indigenous and other local communities.

In layman's language, traditional knowledge (TK) could be understood as knowledge which has been gathered or accumulated by a community through years of experience, it is often tried and tested over long period of time, it is also well adapted to local culture and environment, the main emphasis of it is on minimizing risks for the community rather than maximizing profits. Traditional knowledge is deep rooted in every community across the globe. Such kind of knowledge system is vital for their well being and for sustainable development. The traditional knowledge system has been developed by the communities to conserve and utilize the biological diversity of their surroundings. It is to be kept in mind that TK is collective knowledge of the whole community and a single individual cannot claim a right over it. Examples could be taken of the health care systems. World Health Organization (WHO) has stated that 80 percent of the world's population depends on traditional medicine for its primary health care and Traditional Knowledge is indispensable for its survival. The traditional usage of 'neem' and 'turmeric' in first-aid, curing rashes, cosmetics is the use of traditional knowledge. In South India the medicinal knowledge of the Kani tribes led to the development of a sports drug named 'Jeevani', an anti-stress and anti-fatigue agent, based on the herbal medicinal plant 'arogyapaacha'.

Traditional knowledge (TK) is knowledge, know-how, skills and practices that are developed, sustained and passed on from generation to generation within a community, often forming part of its cultural or spiritual identity. While there is not yet an accepted definition of TK at the international level, it can be said that: TK in a general sense embraces the content of knowledge itself as well as traditional cultural expressions, including distinctive signs and symbols associated with TK. TK in the narrow sense refers to knowledge as such, in particular the knowledge resulting from intellectual activity in a traditional context, and includes know-how, practices, skills, and innovations. Traditional knowledge can be found in a wide variety of contexts, including: agricultural, scientific, technical, ecological and medicinal knowledge as well as biodiversity-related knowledge.

Traditional knowledge (TK) is integral to the identity of most local communities. It is a key constituent of a community's social and physical

environment and, as such, its preservation is of paramount importance. Attempts to exploit TK for industrial or commercial benefit can lead to its misappropriation and can prejudice the interests of its rightful custodians. In the face of such risks, there is a need to develop ways and means to protect and nurture TK for sustainable development in line with the interests of TK holders. The preservation, protection and promotion of the TK-based innovations and practices of local communities are particularly important for developing countries. Their rich endowment of TK and biodiversity plays a critical role in their health care, food security, culture, religion, identity, environment, trade and development. Yet, this valuable asset is under threat in many parts of the world.

Traditional knowledge refers to the knowledge, innovations and practices of indigenous and local communities around the world. Developed from experience gained over the centuries and adapted to the local culture and environment, traditional knowledge is transmitted orally from generation to generation. It tends to be collectively owned and takes the form of stories, songs, folklore, proverbs, cultural values, beliefs, rituals, community laws, local language, and agricultural practices, including the development of plant species and animal breeds. Sometimes it is referred to as an oral traditional for it is practiced, sung, danced, painted, carved, chanted and performed down through millennia. Traditional knowledge is mainly of a practical nature, particularly in such fields as agriculture, fisheries, health, horticulture, forestry and environmental management in general.

The use of medicinal plants and traditional knowledge for health care

Most of the medicinal plants in use are described in the book *Medicinal Plants and Medicinal Ingredients of Vietnam* by Dr. Do Tat Loi, which describes the biological and therapeutic characteristics of more than 800 plant species. The use of TK together with consultations with traditional Eastern physicians and herbalists has permitted him to introduce hundreds of prescriptions for treating many diseases. Especially in rural areas, many medicinal plants are grown in family gardens and used daily by the people. Other medicinal plants have been domesticated and are widely grown for large-scale production – for example, *Eleutherine subaphylla*, *Leonurus heterophyllus* and *Andrographis paniculata*. The amount of the annual harvested material of some medicinal plants can be very high and can range from few tons to several hundred tons (e.g. *Polygonum multiflorum* 28 tons, *Ligusticum wallichii* 37 tons, *Angelica dahurica* 157 tons and *Coix lacryma-jobi* 178 tons).

Many plants are used in curing common diseases such as fever, cough, diarrhoea and influenza. Sometimes the combination of traditional and modern medicines is very helpful in treating serious diseases: for example, *Artemisia annua* can be used to treat malaria and *Catharanthus roseus* for treating blood cancer. Such applications are usually developed by S&T institutes.

Pharmaceutical enterprises also develop such applications, but their medicinal products are registered under their own trademark. Concerning medicinal plants and traditional therapeutic methods, in many cases specific application details remain a secret. Only a few people hold the information and knowledge about specific plants.

In most cases, since traditional medical prescriptions usually contain a large number of ingredients and can vary according to the condition of the patient, one plant can be used in different prescriptions with various doses in combination with other plants. There are thus many prescriptions known and handed down from generation to generation as family secrets. Such “no-patent-needed” informal but recognized knowledge helps its owner to get income; as a result, the owner is not willing either to register or to apply for a patent, because he or she is afraid that other people might come to know the secret.

According to the study conducted by Zoya Nafis In the past few years, ample amount of discussions and debates on the subject of protecting traditional knowledge as intellectual property, have been occurring at the WTO, Conference of Parties at the Convention on Biodiversity, etc. A few national governments in these discussions have embraced the view that traditional knowledge needs to be secured legitimately, and they have condemned the formal IPR framework in its available structure for not just neglecting to give satisfactory protection to traditional knowledge additionally for legitimizing its misappropriation. In India, after the neem patent controversy¹, the need to protect the traditional knowledge of India has gained importance. India has taken an initiative through TKDL, a collaborative project of Council of Scientific and Industrial Research (CSIR) and Department of Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homeopathy (AYUSH), which helps the examiners of Patent Offices to search for any information regarding substance or practice while granting patents and they can dismiss the grant of patent, if the substance or practice is already there in the TKDL list as Indian traditional knowledge. Critics have stated that this documentation could itself lead to misappropriation of India's traditional knowledge. With the rise in need to protect Traditional Knowledge and to prevent its misappropriation the main question that has to be answered is: Can IP protect Traditional Knowledge? However, the main criticism of protecting traditional knowledge with IPR is that IPR leads to the commodification of knowledge; it treats knowledge as a commodity with economic value, which is far way different from the perspective of Indigenous People, who treat their knowledge as pious and sacred.

Mohan Chandran revealed that traditional knowledge is a body of knowledge, pertaining to innovations and practices of a group of local people, extracted and developed through their close contact with nature for generations, which is later shared with the successive generations. TK encompasses development from one generation to another, tangible and intangible knowledge, and innovations of

both potential and actual value. TK has continued to play a critical role in significant areas such as food security, agricultural development and medical treatment.

India possesses a rich traditional knowledge which is generally being passed down by word of mouth from one generation to another. Most part of this traditional knowledge is inaccessible to common since it is described in ancient classical and other literature. There is also a threat of misuse of such knowledge through obtaining patents on non-original innovations which is a great loss to the country. TKDL addresses these issues. TKDL is an initiative to provide the information on traditional knowledge existing in the country, in languages and format understandable by patent examiners at International Patent Offices (IPOs), so as to prevent the grant of wrong patents. TKDL is a collaborative project of the Council of Scientific and Industrial Research (CSIR) and the Department of Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy, is situated in Ghaziabad, U.P. TKDL acts as a bridge between the traditional knowledge information existing in local languages and the patent examiners at IPOs.

Tojo jose explored that several types of traditional medicine approaches of the country like Ayurveda, Unani, Sidha, Yoga etc contains large number of treatments and medicines. But sophisticated MNCs from the West can exploit such age old knowledge by taking patent on them. To block such commercial exploitation, India is preparing a Traditional Knowledge Digital Library (TKDL) which collects and furnishes information about various traditional knowledge medicines. Once collected, the information with the TKDL will be provided to patent examiners in other countries so that they can verify whether an applicant uses traditional knowledge of India. if any traditional knowledge is used, the Patent application can be rejected. TKDL provides information on traditional knowledge existing in the country, in languages and format understandable by patent examiners at International Patent Offices (IPOs). This will check granting of patents on India's traditional knowledge. One real problem is that most of the traditional knowledge are preserved in classical or local languages like Sanskrit, Hindi, Urdu, Tamil etc. Hence this should be collected and converted into foreign languages. Under TKDL, documentation about traditional knowledge available in the form of existing literature related to Ayurveda, Unani, Siddha and Yoga, are done in digitized format. Then it will be translated into five international languages -English, German, French, Japanese and Spanish.

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Content – The Council of Scientific and Industrial Research (CSIR) is contemplating budget cuts to the Traditional Knowledge Digital Library (TKDL). If true, this is welcome news: the TKDL has always been a poorly conceptualised and executed project. Its can be traced to three controversial

patent cases in the US related to neem, turmeric and basmati. The neem patent was for a bio-pesticide derived from neem extracts. The turmeric patent was related to turmeric's healing properties. The basmati patent had to do with a new variety developed by a US company named Rice Tec. The grant of these patents by the US Patents and Trademark Office (USPTO) led to vociferous protests in India on the grounds that the patents were related to 'traditional knowledge'. This was not entirely true. For example, while the pesticidal properties of neem were always known in India, the patent granted in the US pertained to a storage-stable formulation of an organic compound called azadirachtin derived from neem. The formulation allowed the pesticide to be stored for long durations.

In 1995, two expatriate Indians at the University of Mississippi Medical Centre were granted U.S. Patent 5,401,504 on Use of Turmeric in Wound Healing. The claim covered "a method of promoting healing of a wound by administering turmeric to a patient afflicted with wound". This patent also granted them the exclusive right to sell and distribute turmeric. Initially, this news was a disbelief and surprise by many people in India.

In India, the turmeric has been "a classic grandmother's remedy", applied to cuts of children as an anti-parasitic agent, used as a blood purifier and in treating the common cold for generations. It is also used as an essential ingredient in many Indian dishes. It is part of our traditional knowledge. So, the question was how could someone get an exclusive right to sell and distribute turmeric? In 1996, The Council of Scientific & Industrial Research (CSIR), India, New Delhi requested the US Patent and Trademarks Office (USPTO) to revoke the patent on the grounds of existing of prior art. CSIR did not succeed in providing that many Indians already use turmeric for wound healing although turmeric was known to every Indian household for ages. Fortunately, it could provide documentary evidence of traditional knowledge including ancient Sanskrit text and a paper published in 1953 in the Journal of the Indian Medical Association. The patent was revoked in 1997, after ascertaining that there was no novelty.

The decision to hold the International Conference on TKDL was taken in the meeting held in October 2010 at New Delhi between Mr. Prithviraj Chavan, the then Minister of State (I/C) for Science & Technology and Earth Sciences and Dr. Francis Gurry, Director-General, World Intellectual Property Organization (WIPO). The Conference was held at the instance of WIPO since it has expressed the desire to internationalize India's TKDL as a template for other countries wishing to protect their traditional knowledge. The proposal of WIPO was considered as a concrete and potentially very beneficial form of South-South Co-operation which would get recognized India's pioneering role in the area of protection of traditional knowledge. The Conference was held during March 22-24, 2011 at Diwan-i-Am, Hotel Taj Mansingh, New Delhi where delegates from thirty five countries participated. The objective of the conference

was to share experience and information on the role of TKDL in the documentation of traditional knowledge, to identify the intellectual property issue and the technical implication of the establishment of TKDL and to explore the role and functioning of the TKDL within the international IP protection system so that countries rich in traditional knowledge and bio-diversity who are desirous of replicating TKDL as a Model for Protection can take a considered view on the issue. While inaugurating the conference, Mr. Pawan Kumar Bansal, Hon'ble Minister of Science & Technology and Earth Sciences, Government of India, assured to extend all possible cooperation to WIPO and to the countries rich in traditional knowledge and bio-diversity, desirous of adopting TKDL as a Model for protection of traditional knowledge, to able to do so.

Taking forward the series, after our previous parts, 1 and 2, we would now look at TKDL in some more detail. A major issue with TKDL is that important data like medicinal knowledge will only be documented, but never be considered prior art. In the cases of Neem and Turmeric, infringement on the ground of Lack of Novelty led to a granted patent being revoked, due to the existence of ancient or other documents, in the form of prior art, that prove that knowledge already existed. Presently, in TKDL, a search of the word "Turmeric" would show results with details of "useful in the treatment of following disease", "IPC Code", "time since when knowledge was known", "bibliography" and "keyword(s) / Ingredient(s)". The search, whether simple or advanced (as explained in Part 2), would not explain the cause for such a property exhibited by turmeric. The search also shows those medicines which have turmeric as one of their ingredients. The texts that support or prove the use of such a combination may be ancient Ayurvedic texts.

4. Traditional Knowledge

There is an African proverb that

"When an old person of knowledge dies, then a whole library disappears."

According to this proverb, the Traditional knowledge is one which has roots deep in every community around the world. And this knowledge was more helpful for their sustainable development and livelihood. To explain Traditional knowledge in a laymen's language, a Traditional Knowledge (TK) is a piece of knowledge which is gathered by accumulation of load of experience that are tested and tried over a very long period of time in a specific place or community and the people of that place are well adapted to those local environment and local culture whereby they would not attempt to maximise their income but they tend to minimise their risks. And by this, One should understand that a Traditional Knowledge is a collective piece of knowledge and only a whole community can claim a right but never a single individual can claim a right over traditional knowledge. A report by World Health Organisation says that about

80 percent of World's population is depending on the the traditional knowledge on the ancient medical methods for curing disease. The traditional knowledge is based on indispensable for its primary health care uses.

For an instance, the Neem and its use can be registered under traditional knowledge by indigenous people of India for its medical uses which includes first aid, cosmetic nature and for curing inflammation and redness caused by any medical issue. In South India, the anti fatigue agent based on a medicinal plant called "Jeevani" is a piece of traditional knowledge known within 'Kani Tribes'. This is based on a herbal plant used for medical purpose and it is called "arogyapaacha". Certain other traditional knowledge are as follows:

- Ulcer treating medicine in Thai traditional healing method is by the use of 'plao-noi'
- The Western Amazon tribes prepare various kind of medicines by using a plant called 'Ayahuasca' vine.
- The San people stave off hunger by using 'hoodia' cactus while out hunting.¹

5. WIPO Convention on Traditional Knowledge

A Section of Chapter 2 of WIPO convention deals with traditional knowledge when dealing with traditional cultural expressions which is said as TCE's or also called as expressions of folklore. As per the WIPO, a Traditional Cultural Expression (TCE) is considered as idea of knowledge such as traditional medical use of a plant or a traditional ecological management practices but they are different from the expression or representation of our traditional cultures such as traditional song or any other graphic design. In this section the review of the current debate on protection of traditional knowledge which is now in a blooming stage is not considered as a priority area for many countries but WIPO as well as other such international organisations are in consideration regarding this field.

As per the WIPO convention report, the Traditional knowledge holders say that there is a holistic relationship between their traditional knowledge and genetic resources form a part of the indigenous environment and TCE or the expression of the folklore which is the reflection of their cultural identity. A committee was set by the WIPO in year 2001 for addressing the issues regarding traditional knowledge and folklore in a comprehensive manner and that committee was called as Intergovernmental Committee on Intellectual Property and Genetic Resources and ultimately it considers to protect bot the traditional knowledge and TCEs together with regard to the aspect of intellectual property of genetic resources.

¹ (Where traditional knowledge meets mod...)

Also by this WIPO conventions report, there are already certain several initiatives that have enhanced the recognition of traditional knowledge practically, within the patent system. The traditional knowledge is said to be the subject matter of certain ill-founded patent claims but the possibilities for protecting of the traditional knowledge is by means of existing legal tools namely the geographical indications, confidential information and the patent laws. In addition to these laws, many countries have implemented the sui generis protection for the protection of traditional knowledge and further legal steps are needed to prevent the misuse of the traditional knowledge. Though all these legal steps are in practice, there is a need for new approaches to intellectual property to strengthen the customary laws for the protection of traditional knowledge.²

6. Protection for Traditional Knowledge and Intellectual Property Law

When analysing about the nature of protection of traditional knowledge under intellectual property then the first and foremost step is to identify under which category of the Intellectual Property does the traditional knowledge falls upon. The categories of intellectual property under which these traditional knowledge can be protected are divided into Copyright Law, Patent and the Trade Secrets.

Protection of TK under Indian Copyright Law

The Indian Copyright Law though protects the unpublished Indian works under Section 31A2 of Indian Copyright Act, it does not extend its branches to protect directly the traditional knowledge of indigenous people or the expression of the folklore. But there are certain problems in protecting the traditional knowledge. The main drawbacks are regarding the following issues,

- **Authorship:** The Indian Copyright Act protects the author of the work but in protection of traditional knowledge there is no single author for granting protection to the author. In the case of traditional knowledge, the work is an accumulation of knowledge from generation to generation and by this tracing the authorship is difficult and also impossible.
- **Protection for only a limited period of time:** The Indian Copyright law protects the work registered under this for a fixed period of time which is only for a period of 60 years. But in case of traditional knowledge, it should have a perpetual protection and not a limited period of time protection.
- **Fixed form:** protecting the copyright under the Indian Copyright Law only a tangible form of work can be registered. But in case of traditional knowledge, it is never a fixed form of work but it is only a verbal form of knowledge that passed on from generation to generation. Whereas in some of the cases the stories can be found in written form.

²(American Folklore Society and America...)

Thus the traditional knowledge can not be registered under Indian Copyright law and easily denied for being registered because the traditional knowledge fails to satisfy the basic requirements of Indian Copyright Act.³

Protection of TK under Indian Patent Law

The patent law in India is granted to any individual for his invention with a novelty. In this regard, the traditional knowledge does not have an inventive novelty as it is some information which is give to generation by the preceding generations and also there is no single person who can claim the patent of a traditional knowledge because it is a knowledge of a particular community people on the whole. And thus, the traditional knowledge can not be protected under the Indian Patent Act. From the before said it is clear that the traditional knowledge will not be approved for registration under Indian Patent Act.⁴

Protection of TK under Indian Trade Secrets Act

The protection of traditional knowledge under trade secrets act is quiet possible for indigenous people because it does not incur a costly procedure as involved in Patent Act. The traditional knowledge is a secret within particular community people and they are always conscious about protecting their knowledge from generation to generation and by this, a traditional knowledge can be protected under Indian Trade Secrets Act.

Though Indian traditional knowledge is quiet rich which is used in various different fields like agriculture sector, medical sectors etc.. whereas the Indian intellectual property laws fails to effectively protect the traditional knowledge. But there are certain other ways like sui generis legislations for protecting the traditional knowledge and benefit sharing schemes.⁵

7. Traditional Knowledge Digital Library

The traditional knowledge digital library (TKDL) is a unique database and a form of proprietary database which integrates many diverse knowledge systems in diverse knowledges. This was created on the base of 148 books in India that was based on the olden day system of medicine and this includes other prior art books found in India. Thus, this TKDL connects many patent examiners all over the world with help of knowledge from these books. The patent examiners are those who have signed the TKDL Access Agreement and these knowledge and information are available only to them. This agreement has a in-built and non-disclosing mechanism that prevents the misuse of Indian traditional knowledge and this safeguards the interest of India on its own traditional knowledge in ancient medical matters. By this agreement the patent examiners could use the contents for research purposes and they are revealed for the purpose of citation only. Till date, India has signed TkDL Access Agreement with the EPO and

³(World Intellectual Property Organizat...)

⁴(Li and Li 2007)

⁵(Long)

with the Patent offices of several countries such as Australia, Germany, USA, UK and Canada. And also there are ongoing negotiations with Japan and the New Zealand where the agreement principles are reached already to an extent.⁶

8. Impact of TKDL on Biopiracy

The impact of TKDL is already been observed in the EPO. Whereby a report says that since July 2015 the patent applications relating the System of Indian medicine for which third party TKDL evidences are filed have been found. And the EPO has reversed two cases based on the strength of the evidence of TKDL where there was an intention with possibility of to granting patent. And in another case the claim was modified and in several other cases, the applicants themselves have withdrawn the applications which were been pending for about four to five years based upon the TKDL evidence presentation. By this report the applications at EPO has faced a decline at the rate of 44% (approx) which are concerned about the Indian medical system on those ancient time which is more particularly concerned to those medicinal plants in India. Thus, TKDL is proving to be more effective and deterrent against the growing bio-piracy.

The misappropriation of traditional knowledge and the biopiracy of the genetic resources are growing in more countries and it is also a great threat to the indigenous and local communities. Though this issues is taken up by a lot of multilateral forums such as, Convention on Biological Diversity which is also known as CBD , the World Noelle yuan Property Organisation which is known as WIPO and the TRIPS4 council of the World Trade Organisation that is known as WTO, a framework for global Traditional Knowledge protection is still not been established. But the IGC5 team of WIPO convention has now been in making progress in emergence of a legal instrument that protects Traditional Knowledge that binds internationally.⁷

9. Misappropriation of TK in Neem Case

Neem: The Neem tree is a native evergreen species of tropical countries like India and other such Southeastern countries. Neem is called as “the village pharmacy” in India for its healing property and it is used in medicine and mostly in Ayurveda from its very beginning, it can be said to be in use for a period of more than 4000 years ago. The Neem is called as “Arista” which is a Sanskrit word which means imperishable or complete. Not only the Neem leaves are used in medicine but the tree itself is used in medicine. It is used as anti-inflammatory, anti-pyretic, antiseptic, anti-fungal, antiviral medicines.

Bio-piracy: The term bio-piracy means the theft of several genetic resources and materials mainly the plant varieties in the form of obtaining patent. Once a material is patented, the owner could possibly prevent that thing form being

⁶(Ansari 2016)

⁷(Kidd 2012)

recovered by any other person even though the one is real owner of that property. Thus, by patenting the traditional knowledge of indigenous people the corporate can restrict the people from use of their own traditional knowledge and thus it affects the livelihood of native people.

Problem raised in Neem Patent : In the year 1971, a timber importer from US imported neem seeds to plant neem trees in his headquarters in Wisconsin. He also conducted performance and safety tests upon the pesticidal properties of neem and got clearance from the US Environmental Protection Agency known as EPA. After three years he sold the patent to a multinational corporate company which is known as W R Grace and Co. and by the year 1985, several US and Japanese corporations were trying to find and formulation of emulsions for toothpaste production of Neem. Subsequently in the year 1992, the corporate W R Grace and co claimed rights for the pesticide emulsion begotten out of Neem seeds. And by this, it began to sue Indian companies for making such emulsions.

Dispute: According to India's claim, it was stated that Neem is an indigenous product and it is still in practice as a form of traditional knowledge in India. It was also said that Neem if granted patent it would affect the poor farmers and by this the Indian economy will also be harmed.

Neem campaign in India: A group of individuals and several NGO's initiated their Neem campaign and this was done to mobilise the worldwide people for support and to protect the traditional knowledge systems and also protect Indian traditional products from biopiracy. The Neem Case was the first initiative to challenge US and European patents with regard to biopiracy.

Case judgement: On July 30,1997 the European Patent Office (EPO) accepted the arguments of Indian scientists thus this resulted in rejection of patent granted by the iUS patent office to W R Grace and co. The argument which was accepted on whole was the use of Neem and its products in India for a period of more than 4000 years.⁸

10. Misappropriation of TK in Turmeric Case

Use of turmeric in India : Turmeric is a tropical herb and used widely in India as a cosmetic agent and also used mostly in all dishes in India as a colouring agent. The turmeric powder has a deep yellow colour and a slight bitter taste when raw.

Patent issue and Turmeric: In the year 1995, US Patent was awarded to Medical centre Of University of Mississippi for the use of wound healing property of turmeric.

⁸(Debnath 2013)

India's claim: Dr. R.A.Mashelkar who was the Director of Council of Scientific and Industrial research (CSIR) during period of 1995 to 2006 opposed the patent granted to the Medical centre of Mississippi university and worked hard for awakening India's traditional knowledge of Turmeric.

Arguments by Indian scientists: The claim was supported by documentary evidence which was an old newspaper dated 1953 printed and published by Indian Medical Association, and there were also evidences produced which includes old and ancient texts in Sanskrit.

Judgement: In 1998 April, the judgement favoured CSIR which was based on the argument that was proved with string documentary evidence that Turmeric was being in use by Indian people since ancient period of time.⁹

11. Findings

The Traditional Knowledge Digital Library (TKDL) is proving to be effectual in preventing biopiracy and thus the Documentation and Digitising such Traditional knowledge related information should also be made effective. As of now, India is emerging as a pioneer in this field of study.

12. Suggestions and Conclusion

The traditional knowledge is something that should be protected as a valuable asset as it is the basic form of indigenous and local communities livelihood. Traditional knowledge also supports Indian economy since most of the tested traditional knowledge which are used for production of certain novel products have commercial value. Through the traditional knowledge, the agriculturalists conserve and maintain the biodiversity and make sustainable agricultural practices. The documentation of traditional knowledge prevents the chances of bio-piracy whereby the native traditional knowledge is prevented against misuse and misappropriation of our products by third parties. Thus, there must be updation of Traditional knowledge Digital Library (TKDL) periodically and a headquarters should be maintained by a team either by the Central or by the State government. The traditional knowledge of all indigenous products and ideas out of those products should also be a feed in the TKDL. India as a developing country while concentrating in development should also concentrate in protecting the inborn knowledge of country as well.

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⁹(BLR 2515 India - Novelty - PTO - Trad...)

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