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FRAMEWORK FOR PROTECTING TRADITIONAL KNOWLEDGE: WAYS AND MEANS

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Abstract:

Misappropriation of different types of traditional knowledge of different countries is, now-a- days, a thriving business and hence a great challenge to the developing world, especially to the developing countries of the Southern hemisphere. The aboriginal communities of these developing countries, who possess this knowledge, are getting deprived as a result. The multi- national companies of developed countries, who are especially misappropriating this knowledge, neither recognize the contribution of these people, nor do they share the benefits arising out of the commercial use of this knowledge with these people. All these can happen due to the absence of any appropriate law to protect this valuable knowledge base. Presently different countries are trying to prevent these misappropriations with the help of existing intellectual property rights laws. Some sui generis laws have also been developed. But the problem is that most of these initiatives consider a particular dimension of this multidimensional knowledge suited to their objectives. What is happening as a result is that very often these laws are becoming overlapping and contradictory. To overcome this problem what is the need of the hour is to develop a comprehensive law which will encompass all the dimensions of traditional knowledge. The objective of the present study, 'Protecting Traditional Knowledge: A Search for an Effective Law for India' is to find out the lacunas of the present legislative structure and to propose the outlines of a law, its objectives and provisions that could protect the rights of the traditional knowledge holders. Accordingly, the study defines the term traditional knowledge, addresses its different dimensions, and explores the economic importance of this knowledge. How this issue is addressed in different international and national forums, how different existing IPR laws try to protect the rights of knowledge-holders, what initiatives are taken by different countries – all such issues are discussed in the present treatise. The study also explains the limitations of existing laws in this regard. Finally, on the basis of the above analysis a sui-generis law - what should be the objectives of the law, what provisions should be included in the law - has been suggested.

Keywords: Protecting Traditional knowledge, TK, Overview of Protecting Traditional Knowledge, Legal framework for Protecting Traditional Knowledge.

1. Introduction

Intellectual property is an intangible one. Intellect is nothing but the power of brain of a person. Hence it is an intangible asset. According to WIPO "intellectual property refers to creations of the mind: inventions; literary and artistic works; and symbols, names and images used in commerce".

Intellectual property is divided into two categories, namely industrial property and copyright. Industrial Property includes patents for inventions, trademarks, industrial designs and geographical indications. Copyright, on the other hand, covers literary works (such as novels, poems and plays), films, music, artistic works (e.g., drawings, paintings, photographs and sculptures) and architectural design.

Protecting Intellectual Property Right

The right to intellectual property must go in favour of the person who possesses it. But the problem is that how can an asset be protected by the law which is beyond tangibility? In fact, this is an impossible task. So what we usually do in such cases is that we protect the fruits of the intellect, instead of protecting the intellect itself. For example, we extend protection to the invention of a scientist, the writings of an author, instead of protecting the intellect of the author or the scientist. Therefore, protecting intellectual property right means extending a right to the inventor/creator for his/her invention/creation. This right will enable the right-holder to get benefit from the production and sale of his/her invention/creation.

However, an individual cannot enjoy the right over his/her intellectual property for an indefinite period. According to WTO 'intellectual property rights are the rights given to persons over the creations of their minds for a certain period of time.' However, this time period may vary from country to country. In fact, before the commencement of WTO in1995, there was no unique period of time for which this right was granted in different countries. But the TRIPS agreement of WTO has fixed this time period which would be applicable to all the member countries of WTO.

There are several laws relating to intellectual property right protection namely, patent law, trademark law, geographical indication act, industrial design act, copyright act etc. However, here we restrict our discussion only with those laws which are or which may be used in protecting traditional knowledge.

Alternative Ways to Protect TK

Extending protection to TK holders need to satisfy two conditions. First one is to uphold the rights of the TK holders. The other one is to prevent unauthorized appropriation of TK. Therefore, two forms of protection have been developed and applied (WIPO, Booklet 2):

1. Positive protection: giving TK holders the right to take action or seek remedies against certain forms of misuse of TK; and
2. Defensive protection: safeguarding against illegitimate IP rights taken out by others over TK subject matter.

These two approaches have their own advantages and disadvantages and none is proved to be full-proof. Stakeholders, therefore, have emphasized that these two approaches should be undertaken in a complementary way. A comprehensive approach to the protection of the interests of the TK holders is unlikely to rely totally on one form or the other (WIPO, opcit).

A. Positive Protection: The rights of TK holders, right now, all over the world, are being protected mainly by means of different types of existing IP laws. Except IP laws, various non-IP options are also available. The non-IP options include trade practices and labelling laws, the law of civil liability, the use of contracts, customary laws[1] and other legislative measures and indigenous laws of the concerned country.

Some countries again have enacted *sui-generis* law for the protection of the TK. However, many countries are still undecided and have argued that the form of protection should refer to collective human rights to protect their distinct identities; religious and cultural heritage. Others are waiting for the regional or international instruments to protect their TK (Wekundah, 2012).

Although different IP laws are used to protect the rights of TK holders none of them can completely address the needs and expectations of the traditional communities. Among the various Intellectual Property Rights (IPR) laws which are extensively used to protect TK are laws of patent, trademarks, geographical indications, industrial designs and trade secrets. In a subsequent section we shall analyze these laws and try to point the limitations of these laws out to protect the interests of the traditional, indigenous communities.

B. Defensive Protection: Defensive protectionist policy aims to protect TK from misappropriation. Misappropriation of TK is taking place mainly through getting patent right of a product which uses the TK. Novelty is one of the basic criteria of getting patent right. When determining whether a claim is novel the prior art base (the public domain) is examined. If the invention or claim is found described in the prior art base, or offered for use or sale for more than one year, it is not entitled to a patent (Hansen and Vanfleet, 2003).

Defensive protection policy wants to use this clause of the patent act to prevent the bio pirates from misappropriating TK. This can be done by documenting TK and making it public. Documentation intentionally made available to the public as prior art in order to render any subsequent claims of invention or discovery ineligible for a patent. A defensive disclosure provides evidence of the invention, knowledge or use of the invention by others before it was claimed by another inventor, or offers evidence of public use or sale more than one year before the filing date of the patent (Pryor, 1991)

The main difference between positive protection and defensive protection is that where positive protection guarantees legal protection to the right of TK holders, defensive protection does not. Defensive protection can only help a country to fight against bio-piracy. If a country takes the resort of defensive disclosure it would be difficult for the patent authority of another country to grant patent to a product which is based on the TK of the country who already brought it to the public domain. Moreover, even if such a patent is somehow granted it would be much easier for the country, who already disclosed its traditional knowledge base, to invalidate the patent with relatively little up-front costs.

There is one more important difference between positive protection and defensive protection. Since positive protection provides legal instrument to protect the interest of the TK holders it, besides extending legal protection, also ensures the sharing of benefits arising out of the commercial use of the TK. The question of benefit sharing does not arise in case of defensive disclosure because this does not provide any legal instrument.

There are basically two types of mechanisms to defensively disclose information. One consists of the traditional methods of publication in scientific, academic, technical and business journals, etc. The other is the disclosure via developing a digital database or via electronic media like internet.

One of the most important vehicles for defensive disclosure is a community registry, such as traditional knowledge registries. A traditional knowledge registry, if it is 'public' in nature, places information in the public domain and serve as a form of prior art or defensive disclosure. Traditional knowledge registries[2] are official collections of documentation that describe traditional knowledge. It is

typically kept in the form of a computer database. However, a huge risk is associated in building such a digital library. In the absence of any global safeguards, the digital library will become a much wanted source of information on bio-prospecting for private companies. If such digital libraries are constructed all over the world, private companies will surely laugh their way to the bank (Sharma, 2002).

Positive Protection via IPR Laws

Positive protection provides protection to traditional knowledge with the help of legal weapons. Some such weapons are discussed bellow.

Patent

The most widely used weapon in protecting intellectual property rights is known as patent. Patent has an age-old history, dating back to about the thirteenth century. It is

actually a monopoly right granted to an inventor for his invention. The monopoly right is meant mainly for commercial production and sale of the invented product. This right may be used by the inventor himself or by his agent or by anyone else whom a license of using the right has been issued by the inventor.

In fact, during initial periods of industrial revolution in the UK newer and newer machines were being invented frequently. But whenever a new machine came into the market it was soon copied, sometimes even before the inventor could recover his cost of research and development. The idea of providing some kind of protection in the form of granting an exclusive right of using his invention came as a result. The objective was to ensure a satisfactory amount of return to the inventor and by this way to give a boost to him for further research and development.

The grant of an exclusive right of using an invention to its inventor appeared for the first time in the thirteenth century and was quiet frequent in the fourteenth. However, at that time what was given was not a formal patent right, nor was it given only to the first and true inventor. Actually manufacturing monopolies or licensing monopolies were given either to a producer introducing a technology already used abroad or to the first and true inventor.

Patents for inventions only were introduced in the fifteenth century in certain Italian states. The first of its kind was granted in the Republic of Florence in 1421. During the first one or two centuries these grants were ordinarily made without any specific statutes on the subject, but by the virtue of the general authority and the power of the ruler. In 1474, an ordinance relating to patents was enacted in Venice. But formal, comprehensive patent statutes did not appear until near the close of the eighteenth century. It first appeared in the US in 1790.

An attempt to build an international treaty on patent right was made first in 1873 when a discussion was initiated at Vienna, Austria. But no consensus could be reached. Thereafter, a treaty, known as International Union for the Protection of Industrial Property can finally be arrived at the Paris Convention in 1883. But only fourteen countries signed it initially. Still this Convention has a special importance in the history of patent laws. The importance lies in the fact that even the non-member countries of the Paris Convention build their own patent laws up on the basis of the provisions mentioned in the Paris Convention (Balasubramaniam,).

Plant Patent

The protection to plant genetic resources was first sought by the US in the late 1920s. After the World War I the US government found it difficult to put more investment in the agricultural sector through public sectors. The government of the US, therefore, took decision in promoting and encouraging the participation of the private sector in the field of agriculture (Elumalai, opcit). This policy decision led the US government to enact the Plant Patenting Act in the year 1930. The objective was to give incentive to private corporate bodies in the development of High-Yielding Varieties (HYV) seeds in their laboratories. In fact, the research towards developing HYV seeds started during this period. Attracted by the lucrative profit-prospect of seed business private corporate bodies of the US put pressure on their government to ensure the signing of an international treaty which would recognize the breeders' right on these newly developed seeds. The International Convention for the Protection of New Varieties of Plants (the UPOV convention) was signed by twelve developed countries in 1961 in Paris as the fall out of this corporate pressure. In contrary to this UPOV convention, the FAO in its 1983 Undertaking declared plant genetic resources to be the common heritage of mankind.

Geographical Indication

Geographical Indicator (GI) is such an indicator which helps us to identify the geographical origin of a product. The quality and characteristics of the product are exclusively or essentially derived from the geographical environment, including natural and human factors (Suh and MacPherson, 2007). The WTO, in its agreement on TRIPS (Article 22) defines GIs as ' indications which identify a good as originating in the territory of a member, or a region or locality in that territory , where a given quality, reputation or other characteristic of the good is essentially attributable to its geographical origin'. For example, Darjeeling Tea is the geographical indication of varieties of tea that are produced in the district of Darjeeling, West Bengal, India and its surrounding areas. The flavour for which Darjeeling Tea acquired its world- wide reputation is derived from the climatic condition of the area.

A particular good comes to be known by its place of origin only when it earns some kind of reputation. Geographical indications, therefore, have immense commercial potential. Owing to this potentiality GIs often become the victim of piracy. The famous example in this regard is the case of Basmati. Protection to the products with geographical specialty is, therefore, essential, on the one hand, to keep them away from being pirated and, on the other, to exploit their commercial potentiality by the original owner.

The idea of exploiting the specialty of a product arising out of its regional character can be traced back in the seventeenth century, when some European countries wanted to develop a mechanism that could protect the commercial interest of their traders who had acquired some reputation in the international market for the specialty of their product, originated due to their spatial character. The case for geographical indication was first discussed in the Paris Convention for the Protection of Industrial Property (1883). Later on the issue of protecting GI was agreed on the Madrid Agreement for the Repression of False or Deceptive Indications of Source on Goods (1891) and the Lisbon Agreement for the Protection of Appellations of Origin and their International Registration (1958).

Copyright

Copyright, a kind of intellectual property right, confers to the creator, author or the artist, an exclusive right over their creations like musical composition, film; literary works like books and articles; artistic works like paintings, drawings, sculpture etc.

The idea of copyright protection emerged with the invention of printing, which made the literary works to be duplicated by mechanical process (Dureja, 2015). The Gutenberg's printing press was discovered in Germany in 1436. But the first legal attempt to protect copyright was taken only in 1662, when the Licensing Act was passed in England. This Act, titled ' An Act for preventing the frequent abuses in printing seditious , treasonable and unlicensed Books and Pamphlets and for regulating of Printing and Printing Presses' , prohibited the printing of any book which was not licensed and registered with the Stationers Company. The Stationers Company, in fact, was a guild of printers and publishers. Queen Mary I of England, who was becoming more and more unpopular to her people, granted this exclusive right to this company in order to censor, in the name of protecting copyright and checking piracy, any kind of propaganda against her governance. This Act, therefore, in practice, protected the copyright of the publishers, not of the authors.

Only the authors, who were pro-queen and the books of whom were selected by the Company for publication, enjoyed copyright over their books.

The first ever codified, comprehensive law which upheld the copyright of the authors was enacted in 1710 by Queen Anne. This Act is known as the Statute of Anne or the Copyright Act 1710. The stated objectives of this law, besides protecting copyright of the authors, were the encouragement of learning, spread of knowledge and preservation of knowledge.

This Statute conferred a copyright term of 14 years, which could be renewed for a similar term. After the expiration of the copyright the material would fall into public domain.

After the introduction of the Statute of Anne, copyright laws, in some form or the other, started to be enacted by different countries of the world. Although almost all of them were following the basic structure set up by the Statute of Anne, there was no uniformity in them and no coordination was seen among the countries. But this coordination was very much essential in the sense that literary and artistic works always have a universal appeal. Hence the rights of a creator can be protected in true sense only when he/she gets uniform protection all over the world. This demands coordination among countries in formulating uniform copyright acts. This coordination was finally brought by the Berne Convention.

The Berne Convention for the Protection of Literary and Artistic Works, started in 1886 and completed in 1896, discussed various issues of copyrights at length. The Berne Union, constituted by the member countries of the Convention established minimum standards of protection between signatory states.

The biggest change that was brought by the Berne Convention was the introduction of copyright to the unpublished works (Article 5.2). Beforehand, according to the Statute of Anne, a work would be entitled to get copyright protection only after registering his work with the Stationers Company. The Berne Convention extended automatic protection to any cultural expression once it was created.

The two other important features of Berne Convention are national treatment and independence. By Article 5(3), the Convention ensures that any work, originating in a member state receive the same treatment whether the author is domestic or foreign national. Article 5(1) states that each member state shall extend by their own domestic law, which will be independent of protection extended by other countries to the same work.

The Convention set a term of protection which was the life of the author plus fifty years. However this should be the minimum term. Any country, if it wishes, however, can set a much longer term. India, as a signatory of the Berne Convention, initially, in her copyright Act of 1957 , fixed fifty years as the term of protection. But in 1992, in an amendment to the present Copyright Act, the Government of India extended the term to sixty years. This was done mainly to offer an extra term of protection to the literary works of Rabindranath Tagore. However, it was done in tune with the Berne Convention. While setting the minimum term of protection the Convention also stated that the member countries were free to provide greater term of protection.

Likewise Berne Convention the TRIPS Agreement also discussed the issue of copyright at length (Part II, Section 1). It sets forth certain standards for the protection of authors, broadcasting organizations, performers and phonogram producers. The Agreement opines that 'copyright protection shall extend to expressions and not to ideas, procedures, methods of operation or mathematical concepts as such' (Article 9.2).

Trademark

Trademark bears the identity of a product in the market place as well as in the psychological state of the consumers. In this sense it gives some kind of protection to the producer/seller of the product because the used-to consumers of the product gradually become familiar with the trademark and in ultimate course show a little bit reluctance to use products of other brand.

By definition, a trademark is a symbol or sign in the form of a word, a label or a device which enables the producers/sellers to make their product easily distinguishable and identifiable from similar goods and services supplied by the others.

Trademark, a mark of identity, can, therefore, be regarded as a beneficiary mark for trade. This mark, in fact, started its journey during the tenth Century. Referred to as merchants mark' it was used to prove ownership rights of goods. But trademarks came into prominence during the late eighteenth and early nineteenth centuries with the advent of mass scale production in the industrial sector. During this period, the introduction of mechanical system in the industrial sector, along with almost regular inventions in the field of science and technology, popularly known as industrial revolution, led to profound changes in economic structures. Competition among firms for larger share of market led to the use of distinguishing marks to assist consumers in choosing their preferred products.

Gradually, as industrial revolution had advanced, need for the enactment of a law for regularization and standardization of market competition kicked off. Accordingly, the first statutory enactment in this regard took place in Britain in the year 1875.

The British Trademark act of 1875 provided for a formal registration of trademark based on the fulfillment of criterion whether the Trademark distinguished the goods of the trader or not. Thus, Registration was considered prima facie evidence of ownership of a Trademark. Eventually, the

Trademark act, 1875 was repealed and substituted by the Patents, Designs and Trademark Act, 1883 which included the facility to register 'fancy words not in common use' and 'brands' as new marks for the first time. This Act was further substituted by the Trademark Act, 1905. The next re-enactment was the Trademark Act, 1938 (Shirolikar, 2011).

Trade Secrets

"Trade secrets" as defined by WIPO, is "any confidential business information which provides an enterprise a competitive edge". Trade secrets include both manufacturing and commercial secrets like production technique, compilation method or anything else which have commercial value. An information, by the Article 39 of the TRIPS agreement, is considered to be secret if

(i) it has commercial value ;
(ii) it has been subject to reasonable steps by the owner up the information to keep it secret ;
(iii) it is generally unknown among, or readily accessible to, circles that normally deal with the kind of information in question.

Unlike other forms of intellectual property for the protection of trade secrets no registration is required. A trade secret can get protection for an unlimited period of time until the right-holder is able to maintain the secrecy. Trade secrets do not have any legal protection. Since the property right to trade secret is enjoyed through contractual agreements compensation for the loss of secrecy can be asked for only in cases of breach of contract, breach of confidence and dishonest commercial practices. This means that the right-holder must be able to prove some form of malicious intent on the part of a contracting party as the cause for a trade secret's diffusion to the public.

Generally, trade secret protection is weak in most of the countries, including India. There is no particular legislation to protect undisclosed information outside the normal recourse to breach of contract. Under the Indian contract law, trade secrets usually fall under the ambit of agreements in restraint of profession and trade.

The Government of India introduced the National Innovation Bill in 2008. The Bill has dealt with a number of aspects related to trade secrets such as obligation of confidentiality, remedies to protect confidentiality and damages for violation of trade secrets,. The bill, however, did not become a law. Recently National IPR Policy has raised a ray of hope as one of the objectives of the policy is to enact a trade secret law.

2. Defensive Protection

Defensive protection emphasises on the preservation of traditional knowledge. Preservation of TK, according to WIPO, means identification, documentation, transmission, revitalization and promotion of cultural heritage to ensure its maintenance. Preservation of TK, however, implies preservation of both codified and non-codified knowledge. Codified knowledge refers to the knowledge of indigenous communities which are recorded either in any ancient texts or in any contemporary

Positive vs. Defensive Protection

Issues	Post-grant Opposition	Pre-grant

Nature	Opposing party can submit counter documents and participate in re-examination and hearing process.	Objecting party can only file evidence and cannot participate in the examination process.
Cost	Highly expensive, requires legal assistance.	Inexpensive, no requirement of legal support because prior art evidence is available from databases, like TKDL.
Time period	4 – 13 years	3 – 20 weeks

books, journals and reports that focus on TK. Non-codified knowledge, on the other hand, refers to knowledge which exists in oral form only. The Traditional Knowledge Digital Library of India, Traditional Chinese Medicine (TCM) Database of China and The Korean Traditional Knowledge Portal (KTKP) of Korea are examples of digital database of codified TK. They are discussed in Section 4.5.1 and 4.5.2. Documentation of non-codified TK is quite difficult and hence rare. Still countries like Venezuela, South Africa took initiatives in documenting non-codified TK. Such efforts are discussed in Section 4.5.3.

Documentation of Codified Traditional Knowledge in India

India is rich in biodiversity and she also possesses a rich knowledge base in using this bio-resources. But, unfortunately, owing to the lack of proper awareness this knowledge base was being misappropriated by the multinational companies of the North. To prevent such bio-piracy various initiatives are being taken place at the governmental as well as non-governmental level.

A. The Traditional Knowledge Digital Library (TKDL)

Traditional Knowledge Digital Library (TKDL) of India is a knowledge registry. It is actually a digital database of traditional system of medicine in India. Although TK can assume different forms, in building TKDL only the knowledge which can provide important clues to the development of modern drugs thereby saving the time and money is considered. This is due to the increased demand for the traditional medicines all over the world in recent decades. Over 80 percent of people from developing countries depend on traditional medicines for health needs. A study reveals that even in the developed World a significant percentage of people, for example, 50 percent in the USA, 75 percent in France and 90 percent in the UK, consumes traditional medicine at least once (Venkataraman, 2008).

The TKDL is a collaborative project between the Council of Scientific and Industrial Research (CSIR) and the Department of Ayurveda, Yoga and Naturopathy, Unani and Siddha and Homeopathy (AYUSH). This digital library contains information on some 22, 60,000 medicinal formulations. The details of these formulations include description, method on the preparation, claim and the usage to make them compatible with the Patent Application Format (Varkey, 2007). Since most of these formulations were originally expressed in languages such as Sanskrit, Arabic, Persian, Urdu and Tamil, which are beyond recognition of the patent examiners working in the major patent offices all over the world, they were translated into English, French, German, Japanese,

Spanish and Hindi. The local names of plants were converted into botanical names and Ayurvedic description of diseases into modern medical terminology.

The TKDL was built up on the expectation that it would henceforth help patent authorities to reject a patent application which is based on any Indian TK. The government therefore decided to sign a TKDL Access Agreement which has built-in, non-disclosure mechanisms to safeguard India's interest and counter any possible misuse. Such a decision was taken initially in the first meeting of the Inter-Ministerial Access Policy Issue Committee on TKDL, held on December 20, 2002. In the meeting it was decided that the database of the TKDL may be provided to the patent offices of different countries if and only if they sign non- disclosure agreement. (NISCAIR, 2003). Under TKDL Access Agreement, patent examiners may use the TKDL for search and examination purposes only and contents may only be revealed to third parties for the purposes of citation[3]. Owing to such an agreement the TKDL has gained the characteristic of neither being a public registry nor a private registry.

The TKDL has succeeded in preventing the grant of quite a large number of patent applications relating to Indian medicinal system. India's success generates initiatives in other countries to build up similar database. The mention may be made in this regard towards the Chinese and Korean initiatives.

B. Other Initiatives of Documenting TK in India

TKDL is not the only initiative which documented traditional knowledge of India. Several other initiatives are taken by some NGOs and also by few Indian States.

The leading NGOs in India, who play important roles in documenting codified and non-codified TK are Gene Campaign, Society for Research and Initiatives for Sustainable Technologies and Institutions (SRISTI), Kerala Shastra Sahitya Parishad (KSSP), Research Foundation of Science, Technology and Ecology (RFSTE), Navdanya, Kalpavriksh, Beej Bachao Aandolan etc.

Gene campaign has documented biodiversity and associated indigenous knowledge in Jharkhand, Madhya Pradesh, and Uttarakhand. It has focused on three tribal populations: the Munnars in the Chotanagpur region of Jharkhand; the Bhils of Madhya Pradesh; and the Tharus of the Terai region of Uttarakhand. Department of Science and Technology of Indian government supported the documentation. In addition to the collection of information on indigenous knowledge, the project also involved making these communities aware of the threat of biopiracy, and the implications of IPRs and various national and international developments concerning the protection of biodiversity and indigenous knowledge. Medicinal plants and knowledge related thereto was sought to be documented with the help of educated tribal youth. In this process of documentation the collection and understanding of the information has been done with the consultation with the medical practitioners,the traditional healers and the elders in the village (Hirwade and Hirwade, 2012).

Research Foundation of Science, Technology and Ecology (RFSTE) along with Navdanya initiated a movement in early 1999 called the Jaiv Panchayat. Activists from RFSTE and Navdanya constituted informal community-level institutions in different villages of India, called Jaiv Panchayats, to prepare traditional knowledge register of the concerned village..The first Jaiv Panchayat to complete such a register was in Agasthyamuni village, Garhwal district, Uttar Pradesh.

SRISTI, a Ahmedabad-based NGO, initiated a documentation network at the village level, known as Honeybee Network, which documents the elements of biodiversity as well as their uses. This network has been growing since the late 1980s.

Beej Bachao Aandolan, a NGO, in collaboration with another NGO Kalpavriksh, initiated the documentation of the various bio resources used by the villagers in Jardhar of the Tehri-Garhwal district of UP and also of their conservation practices. It was decided that the register developed by this initiative can be used and distributed only with the consent and knowledge of the villagers.

The states like Andhra Pradesh, Kerala and Karnataka also took initiatives in promoting village wise Community Biodiversity Registers (CBRs) and People's Biodiversity Registers (PBRs) for documenting all knowledge innovations and practices of local indigenous people. For example, in Kerala one pilot project has been completed in Ernakulum district, in which NGO Kerala Shastra Sahitya Parishad played an instrumental role.

Among the other states of India Kerala deserves the special mention because it developed an IPR policy to protect the traditional knowledge base of the state in the year 2008. Kerala had, in the past, lost several of its traditional knowledge rights on healthcare, food and food supplements, as well as on designs and cultural properties, because the original inventors or communities that inherited the knowledge over generations were not supported by the government. The policy, therefore, outlines the initiatives of the State in protecting her entire traditional knowledge base that consists of knowledge on bio-diversity, on tribal medicines and Ayurveda practices (Kuriakose, 2008).

Traditional Knowledge Databases of Other Countries

Inspired by India several other countries like China, Korea also took initiatives to create their own traditional data base. Mention can be made of their initiatives in this regard.

A. Traditional Chinese Medicine (TCM) Database

China is one of the most TK-rich countries of the world. The most important type of TK in China is Chinese traditional medicine (TCM), derived from ancient traditions and most of it is written down. China has developed a series of online databases containing information on traditional Chinese medicine. The series includes The Traditional Chinese Medicine Database System, The Traditional Chinese Medical Literature Analysis, Traditional Chinese Drug Database, The Database of Chinese Medical Formula and The China Traditional Chinese Medicine Patent Database (CTCMPD).

The Traditional Chinese Medicine Database System was set up by the Institute of Information on TCM. The database consists of over 40 categories of Chinese Medicine Databases, possessing 1,100,000 items most of which are available in Chinese language and a very few in English.

The Traditional Chinese Medical Literature Analysis and Retrieval Database in Chinese contains more than 6,00,000, of which 120000 are also in English version, references and abstracts to literature on TCM, including Chinese herbal medicines, acupuncture, qigong, Chinese massage, health promotion and other topics. The information is collected since 1984 from different Chinese biomedical journals (Poorna and others, 2014).

Traditional Chinese Drug Database in Chinese contains over 11,000 records, 545 of which in English version, with each record representing a single herb, or mineral drug or other natural medicine, and provides the cited information. The data is derived from Chinese Materia Medica Dictionary, Thesaurus of Chinese Herbs, Chinese Medicinal Materials, Manual of Composition and Pharmacology of Common Traditional Chinese Medicine, etc.

The Database of Chinese Medical Formula is available only in Chinese and contains information on more than 85,000 medical formulae derived from more than 700 ancient medical books. The Medical News Database in Chinese contains more than 60,000 records of news drawn from newspapers related to Chinese medicine.

The China TCM Patent Database (CTCMPD) was established by Patent Data Research and Development Center (PDC), a part of The Intellectual Property Publishing House of State Intellectual Property Office (SIPO) of China. The original purpose of creating this database was to meet the increasing need of patent examination. The CTCMPD has collected available information on all aspects of drugs including development, synthesis, evaluation, manufacture and applications. This database contains 12,024 deeply indexed records of China TCM patent literature with 31,283 TCM formulas in Chinese. The entire database has been translated into English.

B. The Korean Traditional Knowledge Portal (KTKP)

Korean Intellectual Property Office (KIPO) decided in 2004 to formulate information strategy planning for the building of a database of traditional knowledge. The database, which was compiled between 2005 and 2007, is based on traditional Korean medicine. The KTKP database is basically an integrated system of content specific databases such as article, herb, prescription, disease databases and other supporting databases; all being interlinked to each other. When a user searches for a particular disease-related information, the information on the disease along with related herbs and prescriptions is displayed. Related patents and articles are also provided as separate links (Poorna, *opcit*). The search service of the database started commencing from December 2007. The KTKP database, which is available in Korean and English languages, contains around 3, 50,000 entries on Korean medicine, traditional food and intangible cultural heritage. The KTKP preserves only the codified knowledge and defensively protects Korea's TK.

Documentation of Non-codified Traditional Knowledge: Initiatives in Different Countries

Initiatives for developing database for non-codified traditional knowledge are very limited in number. BioZulua Project of Venezuela, Ulwazi programme of Durban are some examples.

A. BioZulua Project of Venezuela

Misappropriation of traditional medicinal resources of indigenous Venezuelan communities in the Amazonian forests provoked the Venezuelan authorities in 2002 to launch a new project, named BioZulua project, to safeguard the resource base. The objective was to data about medicinal plants and food crops provided by the 24 ethnic groups living in Venezuelan part of the Amazonian jungle. The database includes information and data on traditional indigenous medicine and traditional technologies pertaining to agriculture, nutrition, conservation practices, etc. (Muller, 2004).Under the project, information collected by field researchers will be stored in a database, which will be administered from Caracas by the Foundation for Development of Mathematics and Physical and

Natural Sciences (Down to Earth, 2002). The database provides genetic profiles of every plant entry and the entries are complemented with geographical references, bibliographies and digital images. The Biozulua database, however, is not available for public access and has been kept undisclosed for possible positive legal protection through a *sui generis* system in the future (Poorna, *opcit*).

B. Ulwazi Programme of Durban

The Ulwazi Programme was established in 2008 as the first digital library in South Africa aimed at collecting and sharing indigenous knowledge and culture in the greater Durban area in English and local Zulu languages. The Ulwazi Programme collects and shares local knowledge in the form of a 'wiki', a website designed to enable contributions and modifications from multiple users. Local knowledge is recorded on the wiki by fieldworkers who are employed by the programme. The fieldworkers have strong ties to their communities, and have been trained in recording audio and visual material, as well as in basic writing and computer skills necessary for the uploading of stories to the wiki[4].The wiki model also encourages the people connected with Durban to register and help improving the database by editing and adding articles. The content is organized through a series of categories and subcategories (Poorna, *opcit*).

3. Conclusion

There are two different ways by which protection can be extended to the holders of TK to prevent unauthorized appropriation of their knowledge. One is positive protection and another is defensive protection. By positive protection rights are given to the TK holders to take action or seek remedies against certain forms of misuse of TK. By defensive protection, on the other hand, safeguards are provided against illegitimate IP rights taken out by the others over the subject matter of TK.

Positive protection refers to the legal protection extended to TK holders. Presently the rights of the TK holders all over the world, are being protected mainly by means of different types of existing IP laws. Except IP laws, various non-IP options are also available. The non-IP options include trade practices and labeling laws, the law of civil liability, the use of contracts, customary laws and other legislative measures and indigenous laws of the concerned country. Some countries again have enacted *sui- generis* law for the protection of the TK.

Defensive protection emphasises on the preservation of traditional knowledge. Preservation of TK, according to WIPO, means identification, documentation, transmission, revitalization and promotion of cultural heritage to ensure its maintenance. Preservation of TK, however, implies preservation of both codified and non-codified knowledge. Codified knowledge refers to the knowledge of indigenous communities which are recorded either in any ancient texts or in any contemporary books, journals and reports that focus on TK. Non-codified knowledge, on the other hand, refers to knowledge which exists in oral form only.

The main difference between positive protection and defensive protection is that where positive protection guarantees legal protection to the right of TK holders, defensive protection does not. Defensive protection can only help a country to fight against bio-piracy. If a country takes the resort of defensive disclosure it would be difficult for the patent authority of another country to grant patent to a product which is based on the TK of the country who already brought it to the public

domain. Moreover, even if such a patent is somehow granted it would be much easier for the country, who already disclosed its traditional knowledge base, to invalidate the patent with relatively little up-front cost.

References

1. J. Janewa Osei-Tutu, "A Sui Generis Regime for Traditional Knowledge: The Cultural Divide in Intellectual Property Law," Marquette Intellectual Property Law Review , vol. 15.
2. P. Kuruk, "The Role of Customary Law under Sui Generis Frameworks of Intellectual Property Rights in Traditional and Indigenous Knowledge," Indiana International & Comparative Law Review.
3. AS Gazizova, "Protection of Traditional Knowledge: The Work and the Role of International Organizations and Conferences," International Journal of Higher Education
4. "Sui Generis Systems for the Protection of Traditional Knowledge," IIED Report , International Institute for Environment and Development, London, 2004.