INTELLECTUAL PROPERTY PROTECTION OF TRADITIONAL KNOWLEDGE: RESPONDING TO THE CALL OF THE ABORIGINALS

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WHAT DELINEATES TRADITIONAL KNOWLEDGE?

Since there is no widely accepted definition of traditional knowledge, for a general understanding, it can be accepted as any knowledge that has been found by the indigenous or the local people of the society. This knowledge is passed on to generations, and has been in constant practice among the people. WIPO has come up with its own understanding, enunciated as *"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."*[312] This definition not only talks about the particular knowledge that has been transmitted generation to generation, but also encompasses the traditional cultural expression, also called "expressions of folklore", which may include music, dance, art, designs, names, signs and symbols, performances, ceremonies, architectural forms, handicrafts and narratives, or many other artistic or cultural expressions.[313] Frederick Mayor, Director General of UNESCO, puts it as "The indigenous people of the world possess an immense knowledge of their environments, based on centuries of living close to nature. Living in and from the richness and variety of complex ecosystems, they have an understanding of the properties of plants and animals, the functioning of ecosystems and the techniques for using and managing them that is particular and often detailed. In rural communities in developing countries, locally occurring species are relied on for many- sometimes all- foods, medicines, fuel, building materials and other products. Equally, people's knowledge and perceptions of the environment, and their relationships with it, are often important elements of cultural identity.[314] Thus we can see that, while defining Traditional Knowledge, the main point that is to be borne in mind is the customs of the indigenous communities which give rise to the problem of identifying such 'indigenous' communities and

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[312]Anonymous, *Traditional Knowledge*, WORLD INTELLECTUAL PROPERTY ORGANIZATION, (Sept. 5, 2014, 10:30 AM), available at http://www.wipo.int/tk/en/tk/

[313]Anonymous, *Traditional Knowledge*, WORLD INTELLECTUAL PROPERTY ORGANIZATION, (Sept. 5, 2014, 11:20 AM), http://www.wipo.int/tk/en/folklore/

[314]Anonymous, *Definitions of Traditional Knowledge*, NATIOAL ABORIGINAL FORESTRY ASSOCIATION, (Sept. 6, 2014, 4:50 PM), http://nafaforestry.org/forest_home/documents/TKdefs-FH-19dec06.pdf

their 'customs'. The vagueness of the terms 'tradition', 'indigenous' and even 'knowledge' and 'practice' of such knowledge, necessarily requires an international legislature or a national legislature of a particular community where these terms can be unambiguously classified.

THE NEED TO PROTECT TRADITIONAL KNOWLEDGE

According to Anu Bala, Women Scientist, TIFAC, Department of Science and Technology, *"Normally when we talk about innovation, we refer to innovation that is done in universities, industrial R&D laboratories, etc. Often we could not recognize the technology innovations carried out by farmers, tribes, artisans or other grass root innovators… These traditional innovators have generated a rich store of traditional knowledge. Therefore due recognition and reward should be given to these traditional innovators".*[315]

Some of the indigenous and local communities depend on traditional knowledge for their livelihoods as well as to sustainably manage and exploit their ecosystem. For example, the World Health Organization has reckoned that up to 80% of the world's populace relies on traditional medicine for primary health care, and organizations such as the Food and Agriculture Organization, the World Bank, and the United Nations Environmental Program now encourage the use of TK in sustainable rural development programs.[316] Lack of regard and acknowledgement for the work of these grass root innovators and misappropriation of the traditional knowledge is a major obstacle in the path of development and sustainment of this knowledge. The information, not developed under felicitous conditions by scientific methods, is considered as 'inferior' within the modern approach of science. The disinterest in carrying traditional practices forward by the young generations and the encroachment of modern lifestyles often result in the decline of traditional knowledge and practices.[317]

Another threat to traditional knowledge is posed by Biopiracy, which can be defined as, *"The practice of commercially exploiting the naturally occurring biochemical or genetic material, especially by obtaining patents that restrict its future use, while failing to pay fair compensation to the community from which it originates."*[318] The commercialization of

[315]Anu Bala, *Traditional Knowledge and Intellectual Property Rights: An Indian Perspective* (November 1, 2011), available at SSRN: http://ssrn.com/abstract=1954924.
[316]Jay Erstling, *Using patent to protect traditional knowledge*, Texas Wesleyan Law Review, vol. 15 available at open.wmitchell.edu/cgi/viewcontent.cgi?article=1187&context=facsch (visited on Sept 2014)
[317] Anu Bala, *Traditional Knowledge and Intellectual Property Rights: an Indian Perspective* (November 1, 2011), available at SSRN: http://ssrn.com/abstract=1954924.
[318] Oxford Online Dictionary, *Biopiracy*, http://www.oxforddictionaries.com/definition/english/biopiracy

traditional knowledge is fundamentally wrong because the consent of the actual holders of the information is never taken into regard and obtaining a patent on it keeps them from using their own knowledge. Also, no fair compensation is paid to them. Besides, obtaining a patent violates the most crucial pre-requisite of patentability, that is, Novelty and Non- obviousness. A Patent grants a monopoly right over anything new that the patentee invents for a limited period of time in return for the disclosure of the details regarding the invention. These rights are territorial in nature and have three main prerequisites that include Novelty, Non-Obviousness and Industrial Applicability.

"The good monopoly is one which serves to give the public. Through its incentive, something which it did not had before and would not be likely to get without the incentive, at least not so soon. The bad monopoly is one which takes from the public that which it already has or could readily have without the added incentive of the patent right."

- Judge Rich

The concept of novelty essentially requires the invention to be new and not something that is already available to the public. This concept is further emphasized by the definition of 'invention'. Their Lordship of the Privy Council state, *"Invention is finding out something which has not been found out by other people."*[319] Traditional knowledge, which has been open for many years to the people of the community where it was first acquired, is no new invention. Biopiracy is simply pilferage of genetic material that originally belongs to some community, to be sold in a different name to earn unfair profits. It is not just a matter of law, but of morality and fairness.[320]

Biodiversity prospecting or Bio Prospecting, is the exploration, extraction and screening of biological diversity and indigenous knowledge for commercially valuable genetic and biochemical resources. In the vast majority of cases, however, commercial bio prospecting agreements cannot be effectively monitored or enforced by source communities, countries, or by the Convention, and amount to little more than "legalized" bio-piracy.[321] Though many

[319] *Pope Appliance Corporation v. Spanish River Pulp and Paper Mills Ltd.*, AIR 1929 Privy Council 38, (23/11/1928)

[320] Kumar, Nithin V., *Protection of Traditional Knowledge: International and National Initiatives and Possible Ways Ahead* (February 28, 2012). Available at SSRN: http://ssrn.com/abstract=2012724

[321] Anonymous, *Bioprospecting/Biopiracy and Indigenous Peoples*, available at http://www.etcgroup.org/content/bioprospectingbiopiracy-and-indigenous-peoples

would call Bio Prospecting as 'sophisticated' Bio Piracy, one cannot deny that there are many important drugs that are directly derived from the plants, including various life-saving drugs (e.g. – vinblastine, taxol, etoposide, etc.) and several others that are simple semi-synthetic modifications of the naturally occurring substances. Table 1 illustrates various drugs that have been derived from the medicinal plants and their clinical use. [322] It helps scientists to get the technical know-how to develop new products or new use of existing products and saves a lot of time and costs of the big pharmaceutical research laboratories. The development of the new products or new use of the existing products gets them under the protective shield of the patent laws.

Drugs Derived From Plants

Drug	**Plant Source**	**Action/ Clinical Use**
Acetyldigoxin	Digitalis lanata	Cardio-tonic
Ajmalicine	Rauvolfia sepentina	Circulatory Disorders
Anabesine	Anabasis sphylla	Skeletal muscle relaxant
Caffeine	Camellia sinensis	CNS stimulant
Camphor	Cinnamomum camphora	Rubefacient
Camptothecin	Camptotheca acuminata	Anti cancerous
Cocaine	Erythroxylum coca	Local anaesthetic
Glasiovine	Octea glaziovii	Antidepressant
Rutin	Citrus species	Capillary fragility
Sanguinarine	Sanguinaria canadensis	Dental plaque inhibitor
Scopolamine	Datura species	Sedative
Sennosides A, B	Cassia species	Laxative
Silymarin	Silybum marianum	Anti-hepatotoxic
Sparteine	Cytisus scoparius	Oxytocic
Taxol	Taxus brevifolia	Antitumor agent
Topotecan	Camptotheca acuminata	Antitumor, anticancer agent
Vasicine	Vinca minor	Cerebral stimulant
Vinblastine	Catharanthus roseus	Antitumor, Anti-leukemic agent

[322] Anne Marie Helmenstine, *Drugs from plants*, available at http://chemistry.about.com/library/weekly/aa061403a.htm

Yohimbine	Pausinystalia yohimbe	Aphrodisiac

THE CASE OF TURMERIC (CURCUMA LONGA)

In 1995, a patent on use of turmeric for wound healing was granted. However, use of turmeric in Indian cooking on a daily basis is customary. Also, its use in medicines, cosmetics and dyes is an age old practice. A re-examination case with US patent and Trademark office, challenging the patents on the ground of prior art[323] was filed by the Council of Scientific and Industrial Research (CSIR). Documentary evidence of traditional knowledge, including ancient Sanskrit text and a paper published in 1953 in the Journal of the Indian Medical Association was submitted to establish that the findings of the innovators have been known in India for centuries. In 1997, the US patent office revoked this patent.

THE CASE OF NEEM (AZADIRACHTA INDICA)

In 1994, a patent for a method of controlling fungi on plants by the aid of hydrophobic extracted Neem oil was granted by the European Patent Office (EPO). In 1995, legal opposition was filed submitting the evidence that such usage of Neem seeds is time-honoured and hence, not patentable. In 1999, the EPO conceded that such use of Neem seeds has been in public domain prior to the patent application and the patent did not involve an inventive step[324]. The patent granted on was Neem was revoked by the EPO in May 2000.

THE CASE OF BASMATI RICE (ORYZA SATIVA)

A unique patent was claimed before the UK Trade Mark Registry for a rice plant having characteristics similar to the traditional Indian Basmati Rice lines and with the geographical delimitations. The said patent covered 20 claims including both novel rice plant and various rice lines; resulting plants and grains, seed deposit claims, method for selecting a rice plant for breeding and propagation. The said claims would have highly affected the Indian exports to US, if legally enforced.

[323] Prior art is any evidence that your invention is already known.
[324] A feature of an invention that involves technical advancement as compared to the existing knowledge or having economic significance or both and that makes the invention not obvious to a person skilled in the art.

CFTRI (Central Food Technological Research Institute) scientists evaluated the various grain characteristics and accordingly the claims were attacked on the basis of the declarations submitted by CFTRI scientists on grain characteristics. Eventually, the claims were withdrawn.

INTERNATIONAL REGULATORY FRAMEWORK

A. CONVENTION ON BIOLOGICAL DIVERSITY(CBD)

Before there were any laws governing the realm of intellectual property, the genetic resources were regarded as "common heritage of mankind" and were mutually shared.[325] As an initiative to start recognizing the contribution of the aboriginals in conservation of Biodiversity, the Convention on Biological Diversity was set up as the first major international convention that assigns the ownership rights to the holders of the traditional knowledge.[326] More than 180 countries have ratified the convention, agreeing to its main objectives, these being 1) the conservation of bio-diversity, 2) the sustainable use of its components; and 3) the fair and equitable sharing of the benefits arising out of the utilization of genetic resources.

In its Preamble, CBD has acknowledged the dependence of the aboriginals on biological resources for their livelihood and fulfilment of primary needs and stresses on the desirability of benefit sharing.

Article 8 (j) obligates the State Parties to

"respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote the wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices."

Article 18.4 promotes the idea of contractual agreements and states that the contracting parties

[325] Dominic Keating, *Access to Genetic Resources and Equitable Benefit Sharing through a New Disclosure Requirement in the Patent System: An Issue in Search of a Forum* (2005) 87 *Journal of the Patent and Trademark Office Society (JPTOS)* 525 at p.530

[326] See the *Bio diversity convention: the concerns of indigenous people(*1998) Australian indigenous law reporter page 38 , available at www.austlii.edu.au/cgi-bin/disp.pl/au/journals/alir/1998/3\

cooperate and mutually decide the terms and conditions of the contract for the development and use of traditional & indigenous technologies.

Article 10(c) provides that each contracting party takes caution to use biological resources in accordance with traditional cultural practices which do not go against the conservation of biodiversity. However, the said article neither talks about protection of Traditional Knowledge nor makes it legally binding. Ultimately, everything is left at the discretion of the parties[327].

B. AGREEMENT ON TRADE RELATED ASPECTS OF INTELLECTUAL PROPERTY RIGHTS (TRIPS)

The main intention of TRIPS is to enforce the intellectual property rights while removing any impediment in the way of legitimate international trade. However, there are limited provisions that can be applicable for the protection of traditional knowledge. Protection of Geographical Indications[328] is one stipulation that can be harnessed to keep tabs on the escalating instances of Biopiracy.

Article 27 of the TRIPS agreement lays out the requirements for patentability including any inventions, whether products or processes, in all fields of technology, provided that they are new, involve an inventive step and are capable of industrial application. However, Article 27.3(b), which was the focus of attention of the 2001 Doha Declaration, does not compel the members to provide for patent protection of plants and animals other than micro-organisms, non-biological and microbiological processes. However, members are required to provide for the protection of plant varieties either by patents or by an effective sui generis system[329] or by any combination thereof.

C. WORLD INTELLECTUAL PROPERTY ORGANIZATION

The WIPO Intergovernmental Committee (IGC) has been built in an attempt to promote and orchestrate Intellectual Property Rights in relation to Genetic Resources, Traditional Knowledge and Folklore by undertaking text-based negotiations with the objective of reaching

[327] Mugabe. J & Kameri P , *Traditional Knowledge, Genetic Resources and Intellectual property protection: Toward a new international regime,* prepared by International Environmental law research Centre, available at www.ielrc.org/content/w0105.pdf

[328] It refers to such characteristics of a particular item which ascribe it to its geographical origin.

[329] Sui generis is a Latin term meaning "a special kind". Here, it refers to a special form of protection particularly devised to meet a specific need.

an agreement to frame an international legal instrument(s).330 The three main objectives that WIPO strives for include 1) protection of the traditional knowledge (the technical know-how, practices, innovation) 2) expressions of folklore (music, art, symbols, etc. that are the source of traditional knowledge) and 3) genetic resources and benefit sharing. It was realized that genetic resources, traditional knowledge and folklore were deeply interrelated and their rising importance to the aboriginals belonging to the countries of the third world made it necessary to entail them in the core objectives of the committee.[331]

The Twenty-Eighth Session of the IGC took place from July 7 to 9, 2014. The Committee confirmed that the texts, as developed during IGC 26 and IGC 27, be transmitted to the 2014 WIPO General Assembly. Delegates also took stock of progress and discussed the future work of the Committee.

THE AFFAIRS BETWEEN TRIPS AND CBD

In 1999, TRIPS set up a council to reassess its Article 27.3(b) and the relationship of the TRIPs Agreement and the CBD. Proposals were made to necessitate the disclosure of biological source, the country of origin and prior informed consent.[332]. In 2001, the TRIPS council was divided on the issue whether there was any conflict between the two confederations. The USA, Japan, 25 Member States of the European Communities and developing countries such as the Republic of Korea and Singapore contended that there is no conflict between the two and both can be implemented in a mutually supportive manner. However, Brazil and India were of the view that there were conflicts which required an amendment to the TRIPS agreement to deal with them.

In contrast to CBD, the TRIPS agreement contains no provisions regarding Prior Informed Consent, Traditional Knowledge and Benefit Sharing. However, the compulsion to safeguard the Geographical Indications can be used as armour to shield the traditional knowledge and genetic resources.[333] Thus we see that makes no direct reference to the protection of traditional

[330]World Intellectual Property Organization, *Inter-government Committees*, available at http://www.wipo.int/tk/en/igc/

[331] Secretariat, WIPO, *Matters Concerning Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore*, available at http://www.wipo.int/edocs/mdocs/govbody/en/wo_ga_26/wo_ga_26_6.pdf

[332] Secretariat, *Minutes of Meeting, TRIPs Council, WTO Document*, IP/C/M/24 (August 17, 1999), para.81.

[333]Varkey Elizabeth, *Traditional Knowledge - The changing scenario in India*, available at www.law.edu.ac.uk.ahrb/publication/varkey.htm.

knowledge. Essentially, the CBD deems the natives as the true owner of the traditional knowledge, thereby having a rightful claim to control its usage. By contrast, the view under TRIPS is that the owner is the one who obtains a patent over the subject-matter and since there is no individual who owns a patent over genetic resources or its knowledge, it is available for exploitation by all those who wish to.[334]

D. THE NAGOYA PROTOCOL

The Nagoya Protocol is an ancillary accord to the Convention on Biological Diversity seeking to establish a transparent legal framework that brings to fruition the objectives of the CBD.[335] Core obligations including Access Obligations, Benefit-Sharing Obligations and Compliance Obligations have been devised to warrant implicit structure for access to genetic resources and equitable share of benefits. Article 5 of the protocol makes certain that parties take legislative and administrative efforts to ensure that the benefits arising out of employment of genetic resources are shared in a fair and equitable manner with the indigenous community for preserving it on the mutually agreed terms. Article 10 of the protocol emphasizes on the need for development of a global multilateral benefit sharing mechanism for communities where it is not possible to take prior consent. A range of tools and mechanism are close at hand to aid the operation at the domestic level but all things considered, it is left upon the national legislations to provide for specific terms and conditions as per their individual needs and policies.

NATIONAL REGULATORY FRAMEWORK

A. TRADITIONAL KNOWLEDGE DIGITAL LIBRARY

Since traditional knowledge is the work of the indigenous people of a particular community, it exists in distinctive databases in their native dialect which had erected a vernacular blockade. As a result, the patent officers failed to infiltrate into these databases and acknowledge the existence of such knowledge before approving the patents. The concerted efforts of the Council of Scientific and Industrial Research (CSIR) and the Department of

[334] Dr. Gerard Bodeker, *Traditional Medical Knowledge, Intellectual Property Rights and Benefit Sharing*, 11 Cardozo J. Int'l & Comp. L. 785 (2003-2004), available at http://heinonlinebackup.com/hol-cgi-bin/get_pdf.cgi?handle=hein.journals/cjic11&section=32

[335]Convention on Biological Diversity, *About the Nagoya Protocol*, available at http://www.cbd.int/abs/about/

AYUSH[336] (Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homeopathy), resulted in the initiation of Traditional Knowledge Digital Library as a contrivance to undertake bio piracy. Information comprising about 200,000 formulations has been transcribed for realizing the objective of TKDL Project.[337] The converted format of the formulation is available in English, German, French, Japanese and Spanish and is easy to comprehend.

The TKDL has prevailed over the language barriers and is making access to TK a lot easier for major patent offices. Today, as a result of TKDL, India has safeguarded about 0.226 million medicinal formulations and at zero direct cost. Besides the revocation of the patent of Turmeric, Neem and Basmati Rice, TKDL has also helped in foiling the China's bid to patent Pudina, Natreon Inc's attempt to patent the use of Ashwagandha in reducing stress, and the use of 'kumari' plant in case of ' dry eyes'. However, revocation is not the solution every time since the process of revoking a patent can be a costly and time-consuming affair. It takes, on average, five to seven years and costs between 0.2-0.6 million US dollars to oppose a patent granted by a patent office. The cost of protection for India's 0.226 million medicinal formulations without a TKDL, would be prohibitive.[338]

On the face of it, having a digital library appears to be an effective tool to counter bio piracy. In a world where profit and greed have become the new economic mantra, private companies will go to any extent to manipulate what is already known to project it as an invention or novelty. Any tinkering of the original medicinal remedy with a little cosmetic covering can be easily presented .as a novel product that was not previously known.[339] The easy access provided to the data of the digital library, though meant for the patent officers, can be easily misused by private companies to scout for therapeutic properties of the data, modify it and present it as a new invention.

B. THE INDIAN PATENTS ACT

The Patents (Amendment) Act, 2005 was passed as an obligation under TRIPS to bring the Indian Patent Act, 1970 in line with the international laws and to introduce product patents to

[336] Earlier known as the Department of Indian Systems of Medicine and Homeopathy (ISM&H)
[337] Anonymous, *Biopiracy of Traditional Knowledge*, available at http://www.tkdl.res.in/tkdl/langdefault/common/Biopiracy.asp?GL=Eng
[338] World Intellectual Property Organisation, *Protecting Indian Traditional Knowledge from Biopiracy*, available at http://www.wipo.int/export/sites/www/meetings/en/2011/wipo_tkdl_del_11/pdf/tkdl_gupta.pdf
[339] Devinder Sharma, *Digital Library On Medicine System Another Tool For Biopiracy*, available at http://www.jstor.org/stable/4412269.

medicine and agro chemicals, by removing the bar on patentability on these. The amendment act has widened the scope of 'novelty' by defining 'new invention' and further clarifying 'inventive step'. Section 3 of the Patent Act, 1970 was amended whereby an enhancement in the known efficacy of a new form of known substance s necessary to get it patented. The amendment now requires that the new use of a known substance should not be allowed. Also, mere use of a known process or method is excluded from protection unless the result is a new product or employs at least one new reactant. While the definitions of food, medicine, etc have been omitted, "pharmaceutical substance" has been defined. The amendment also sets the conditions wherein a person resident in India shall be permitted to make, or caused to be made any application for the grant of the patent outside India. India has made provision for both pre-grant and post-grant opposition.[340] This provision will prevent the issuing of trivial patents and provides ample opportunity to the local and generic companies, as well as other interested parties to challenge on specific grounds under section 25(1) of the act. The Amendment Act has inserted section 92-A which provides for export of patented pharmaceutical products in certain exceptional cases such as the importing country having insufficient or no manufacturing capacity, to address public health problems.[341]

C. BIOLOGICAL DIVERSITY ACT

The Biological Diversity Act, 2002 was passed in compliance with the provision of CBD to provide for upkeep, sustainable deployment of the genetic resources and equitable sharing of benefits arising out of it. The preamble of the act clearly establishes the autonomy of the state over its biological resources. The act has instituted authorities to ensure its proper execution at different levels including the National Biodiversity Authority, various State Biodiversity Boards and at the local level, Biodiversity Management Committees which comprise of the panchayats and the municipalities. It provides a framework for access to biological resources for the purpose of bio-survey and bio-utilization and sharing the benefits arising out of such access and use. The Act also includes in its ambit the transfer of research results and application for intellectual property rights (IPRs) relating to Indian biological resources[342]. The Biological Diversity Rules, issued in 2004 are an appendage to the Act, which confine the important

[340] Patents (Amendment) Act 2005, Sec. 23; Patents Act, 1970, Sec. 25
[341] Patents (Amendment) Act, 2005, 2004, Sec. 55; Patents Act, 1970, Sec. 92-A
[342]National Biodiversity Authority of India, *Know the Biological Diversity Act (2002) and the Rules (2004)*, available at http://nbaindia.in/uploaded/pdf/know.pdf

decision making powers regarding the access, knowledge transfer and intellectual property rights with the Authority. In 2007, *panchayats* and community representatives submitted over 3000 resolutions to the Prime Minister expressing their concerns over the reduced role of the Biodiversity Management Committees.[343] The act provides that if the compensation or benefit sharing is paid in money, these funds may, upon the discretion of the NBA, be accrued to the source of the resource or knowledge, if identified. Otherwise, they shall be deposited in the National Biodiversity Fund.[344]

Another important provision of the act is regarding the consequences of non-compliance with the act, making any offence under the act cognizable and non-bailable. The punishment may include a fine, or imprisonment, or both.

CONCLUSIVE IMPLICATIONS

The article validates the protection of traditional knowledge in the wake of escalating violations of the intellectual property rights of the aboriginals. An assortment of various propositions put forth by the international and national authorities have been ascertained. It has been observed that the international conventions have their own rationale behind manoeuvres to tackle bio piracy, which are not legally binding on the parties to such international organizations. However, the signatories or the members have to amend their laws to conform to their standard norms.

These members are by and large, countries of the third world that usually lack a strong and efficient system to administer and ensure effective implementation of their laws. Such a situation mandates the existence of an international authority that should draft certain standard laws to govern the IP rights of the aboriginals. These laws should be flexible, internationally accepted and legally binding on the members of the agency. The standard laws should be based on a combination of the already existing propositions, based on their merits and demerits. These propositions mainly include contractual agreements, access to benefit sharing and possible sui generis system. A contractual agreement between the traditional knowledge holder and the

[343]Anonymous, *The Bio-diversity Act is Progressive, but not Fool-proof*, FIN. EXPRESS, Apr. 30, 2007, *available at* http://www.financialexpress.com/news/The%20biodiversity%20Act%20is%20progressive,%20but%20not%20fool-proof/106130

[344] Section 21(3), BDA, Rule 20(8), Biological Diversity Rules

pharmaceutical company, subject to the terms and conditions decided by the parties to the contract, can be made that is guided by and conforms to the international standard and has equitable benefit sharing provisions.

Such a system will require an efficient and impartial administration at the international and national level to govern the contract and the benefits include a reliable, nonaligned system that is one and the same for all. The alternative courses of protection include having a digital database, such as TKDL, Disclosure of Origin and Geographical Indicators. However, these are transitory solutions to continuing problems. One of the most important things that are to be realized is that protection of TK does not imply concealing it with the veil of IPR. However, protecting the rights of the indigenous people who depend on it for their livelihood and calling a halt to the unfair patent grants to pharmaceutical companies is an insistent necessity.