

BIOPIRACY: ETHICAL LEGAL AND POLITICAL QUESTIONS IN INDIA

Written by Swasti Misra & Apoorv Mehrotra***

** One Year LL.M Candidate, National University of Juridical Sciences (WBNUJS), Kolkata*

*** One Year LL.M Candidate, NALSAR Hyderabad*

INTRODUCTION

Since times immemorial there has been an age old saying stating that knowledge is power but during the changing times with the advent of intellectual property law it can be said that knowledge is the primary source of property and not only a source of power. Intellectual property has been divided into various sub- parts like copyrights, patents, designs and trademarks where the intellectual right of an individual is protected against any sort of infringement. They generally have monopoly rights over their work for a limited period of time before they are open in the public domain for use. But there is one more kind of intellectual property which is community based and which is created, managed and owned by a group of people and are passed on by one generation to the others as cultural heritage. This form of intellectual property is known as Traditional Knowledge.¹

‘Traditional Knowledge’ means the protection of rights of local and indigenous people throughout the world as against the knowledge, practice or innovation of their culture or tradition which their community has been following from a long period of time and has been passed on by one generation to the other. The knowledge which comes within the ambit of traditional knowledge is as diverse as folk dances, recipes, handicrafts, scientific or medicinal knowledge or any kind of literary and artistic work². This knowledge is not static but ever evolving as it continuously changes and advances by the interactions of the local communities with their environment and surroundings. It is not written down but passed on by generations and are human memories. There is no one acceptable definition of the term but different organisations and conventions have tried to define it. The Convention on Biological Diversity

¹IPR & the law by G. B Reddy

² See Tejaswini Apte, A Simple Guide to Intellectual Property and Biodiversity and traditional Knowledge, Kalpavriksh Grain and IIED, Pune/Delhi, 2006,p.34

talks about traditional knowledge as “*the knowledge, innovations, and practice of indigenous and local communities embodying traditional life style as well as indigenous and local technologies.*”³ Traditional knowledge had also been defined by the Director General of United Nations Scientific and Cultural Organization in the following words:

*“the indigenous people of the world possess on immense knowledge of their environments, based on centuries of living close to nature. Living in the richness and variety of complex ecosystem and techniques for using and managing them is particular and often detailed with reference to traditional knowledge and communities possessing traditional knowledge. In rural communities in developing countries, locally occurring species are relied upon for food, medicine, fuel, building materials and other products. Equally, people’s knowledge and perceptions of the environment and their relationship with it are often important elements of cultural identity.”*⁴

It can be understood from the above definitions as provided by different organizations that there is a need to protect this indigenous knowledge from unfair use. The necessity to provide protection lies in the fact that moral values and traditional lifestyle needs to be conserved in the public interest.⁵ But now-a-days there has been an increased unauthorized use of traditional knowledge which totally ignores the concept of benefit sharing with the indigenous people. Bio-piracy is one such issue which has been threatening the rights and existence of the traditional knowledge of the indigenous people. The Oxford Dictionary defines bio-piracy as “*The practice of commercially exploiting 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.*”⁶

Bio-piracy is often done by developed economies by hampering the rights of the indigenous people of the developing or underdeveloped economies which are rich in biodiversity (having large variety of flora and fauna). The geographical indications, the genetically modified foods and the plants with medicinal properties are the major sufferers of the evil of bio-piracy.

India is a land of culture and traditions and is host to a vast variety of biodiversity. In some rural areas traditional knowledge is the only form of livelihood.⁷ There have been many cases

³Conventional on biological diversity

⁴<http://www.nativescience.org/html/traditionknowledge.html>.

⁵Sreenivalu

⁶<https://en.oxforddictionaries.com/definition/biopiracy>

⁷<http://www.scopemed.org/fulltextpdf.php?mno=152460>

of bio-piracy in India including the infringement of the rights of the indigenous people to the knowledge related to medicinal value of plants where the pharmaceutical industries have used the knowledge without proper benefit sharing and also the genetically modified foods have been developed using the genetic resources of plants which form part of the traditional knowledge and culture.

There have been many international legislative frameworks for the protection of Rights of indigenous people including the TRIPS, Convention on protection Biological Diversity etc. To quote one of the protective measures as provided under Article 31 of the United Nations Declaration to Protect Rights of Indigenous people:

“1. Indigenous peoples have the right to maintain, control, protect and develop their cultural heritage, traditional knowledge and traditional cultural expressions, as well as the manifestations of their sciences, technologies and cultures, including human and genetic resources, seeds, medicines, knowledge of the properties of fauna and flora, oral traditions, literatures, designs, sports and traditional games and visual and performing arts. They also have the right to maintain, control, protect and develop their intellectual property over such cultural heritage, traditional knowledge, and traditional cultural expressions.

2. In conjunction with indigenous peoples, States shall take effective measures to recognize and protect the exercise of these rights.”⁸

The Indian law makers have also taken an initiative to protect the rights of the traditional knowledge of the indigenous people by legislating the Biological Diversity Act, 2002, the Geographical Indications (Registration and Protection) Act, 1999 and the Protection of Plant Varieties and Farmers’ Rights Act, 2001 in order to put a stop to the misappropriation of the traditional knowledge and to secure benefit sharing to the original owners of the knowledge.⁹ Despite the protective measures in the form of enactments there have been a lot of cases of bio-piracy which showcase the ineffectiveness and discrepancies within the legal framework to fully provide a cover to traditional indigenous knowledge and also lack of ethical and political irregularity which throws light on the fact that the rights of such people are not being given as

⁸http://www.un.org/esa/socdev/unpfii/documents/DRIPS_en.pdf

⁹<http://spicyip.com/2015/07/guest-post-safeguarding-the-sacredness-of-traditional-knowledge-an-argument-for-a-sui-generis-framework-for-its-protection.html>

much priority as it deserves and personal profits still remain the priority of the developed countries which call for stricter regime and effective governance.

Traditional Knowledge Case Studies

BT Brinjal Case: The case against Monsanto and its Indian Collaborator

The first Bio-piracy case in Indian History is the case accusing the multinational company and its collaborators for stealing indigenous plants who then trying to develop version of the same without giving proper compensation back to the local people or nation where the plants originally came from. The American Seed giant Monsanto and its Indian collaborators have been prosecuted for stealing the Brinjal to develop genetically modified version of eggplant (Brinjal). The National Biodiversity Authority of India (NBA) and Karnataka Biodiversity Board had accused the Maharashtra Hybrid Seed Company (Mahyco) and Sathguru Management Consultants Private Ltd. of developing Bt Brinjal by using indigenous varieties from the state without taking sanctions the respective biodiversity authorities. The controversial move by NBA was based on a complaint filed in 2010 by the Bangalore base Environment Support Group (ESG) The petitioner argued that Section 40 of the National Biodiversity Act of 2002, which allows such unfettered trade in India's biological wealth, paves way for rampant biopiracy and petitioners call for quashing of this section as being ultra vires of the Act and the Constitution of India. According to the Biodiversity Act, genetic modification is not permitted in endemic breeds of a plant. But, the eggplant varieties used by Monsanto and its partners in creating Bt Brinjal were native breeds of Karnataka. And activists claim that Mahyco and others involved in the development of Bt Brinjal used the country's biological resources without proper permission. "In the case of Bt Brinjal, even if the company had approached the concerned authorities, they would not have got clearance for modifying the native varieties of the crop they used, as it is against law... so they did it clandestinely without divulging details about the local breeds used or the research they conducted,"¹⁰

Neem Case

¹⁰ <http://www.ibtimes.com/indian-high-court-reinstates-criminal-proceedings-against-monsanto-its-partners-1431534>

A classic case of biopiracy by transnational corporations is that of the neem tree in India¹¹. On December 12, 1990 the multinational agrochemical giant W.R. Grace of New York, U.S.A, filed a European patent Application with the European Patent Office covering a method for controlling fungi on plants by the aid of hydrophobic extracted Neem oil. Ultimately, the grant of a European patent for this application was published on September 14, 1994. The patent number 0436257 was allowed to the U.S. corporation W.R. Grace for 'a method for controlling fungi on plants comprising contacting the fungi with a neem oil formulation containing 0.1 to 10% of a hydrophobic extracted neem oil which is substantially free of azadirachtin, 0.005 to 5.0% of emulsifying surfactant, and Zero to 99% water'¹².

In 1995, after nine months from the date of publication a legal opposition to this patent was filed jointly by three plaintiffs. There were - Magda Aelvoet, the then president of the Green Group in the European Parliament, Brussels, Dr. Vandana shiva, on behalf of the Research foundation for Science, Technology, and Natural Resource Policy, New Delhi, India and the International Federation of Organic Agriculture Movements (IFOAM), based in Germany and represented by its then vice president, Linda Bullard. Initially, they filed the original opposition petition without benefit of legal representation. Afterwards, they authorized Prof. Dr. Fritz Dolder (Professor of Intellectual property, faculty of law, University of Basel, Switzerland) to represent them.

The opponents, in their petition, argued that the fungicidal effect of hydrophobic extracts of neem seeds was known and used for centuries on a broad scale in India, both in Ayurvedic medicine to cure dermatological diseases, and in traditional Indian agricultural practice to protect crops from pesticides and insecticides. So, the patent was granted in violation of two basic norms for granting patent. These were: "novelty" and "inventive step". They also opposed the patent as it was against "morality" under Article 53(a) of European patent convention (EPC). Because, the patent claims of the patentee was nothing but stealing and theft against the traditional knowledge base of India which is called immoral. They also opposed the patent on the ground of "insufficient disclosure" (EPC Article 83) and "lack of clarity" (EPC Article 84) and claimed revocation of the patent. However, in 2000, the patent was revoked on the ground that the invention does not fulfil the criteria of novelty and inventive step. Hence, the patent was revoked.

¹¹ Dr. Vandana Shiva, <http://www.twm.my/title/pir-ch.htm>

¹² http://www.ifoam.org/press/press/pdfs/Briefing_Neem.pdf.

Turmeric Case

The several popular use of turmeric powder product is known to the world. It is used as a dye, a cooking ingredient, and litmus in a chemical test, and has medicinal uses as well. As a medicine, it is traditionally used to heal wounds and rashes. However, in 1995, two Indian nationals at the University of Mississippi Medical Centre were granted U.S patent no.5, 401,504, for the "use of turmeric in wound healing"¹³. This patent also granted them the exclusive right to sell and distribute turmeric. Two years latter a complaint was filed by India's Council of Scientific and Industrial Research (CSIR), which challenged the novelty of the patent. The U.S. patent and trademark office (USPTO) investigated the validity of the patent. Council of scientific and industrial research (CSIR) of India filed the complaint and argued that turmeric has been used for thousands of years for healing wounds and rashes and therefore its medicinal use was not novel. Their claim was supported by documentary evidence of traditional knowledge, including an ancient Sanskrit text and a paper published in 1953 in the journal of the Indian Medical Association. In fact, turmeric has been used medicinally for thousands of years. Had the biopiracy of turmeric been continued it would have a serious consequence upon the Indian economy. However, in 1997, despite the arguments by the patentees, the United States Patent & Trademark Office (USPTO) upheld the CSIR objections and revoked the patent. A third world country like India, earns huge foreign exchange by exporting spices including turmeric. But as a result of rampant Bio-piracy, this foreign exchange earnings may be reduced. This will adversely affect the foreign trade of India. The role of turmeric in earning foreign exchange in India is very important. Huge foreign exchange is earned each year by selling turmeric outside the country. Many cultivators who are associated with this trade will also suffer a lot. However, following are the relevant data regarding export of spices, including turmeric in India¹⁴.

Basmati Rice

In India, rice is produced in the foothills of the Himalayas for thousands of years. Rice is famous all over the world for its unique characteristics such as its 'Aroma'. In fact India is a world's largest exporter of rice in the recent times. On September, 2, 1997, the United States Patent and Trade mark Office granted U.S. Patent No. 5,663,484 to the United States Company

¹³ U.S. Patent NO 5,401 ,504(USPTO)

¹⁴ <http://www.indianspices.com>

Rice Tee Inc¹⁵, which covers Basmati rice lines and grains and plants of these lines. The invention also relates to a novel means for determining the cooking and starch properties of rice grains and its use in identifying desirable rice lines. Granting of patent of Basmati affected the economic interests of the farmer communities in South East Asia including India. However, India contested the patent for Basmati rice acquired by Rice Tee Inc., which had been challenged by the Agriculture and Processed Food Products Export Development Authority (APEDA) and in the words of Dr. Vandana Shiva of a Delhi based research foundation which monitors issues involving patents and biopiracy she claims that theft involved in Basmati Patent case has threefold:

A theft of collective intellectual and biodiversity heritage on Indian Farmers,

A theft from Indian traders and exporters whose markets are being stolen by RiceTec,

And a deception of consumers since RiceTec is using a stolen name Basmati for which is derived from Indian rice but not grown in India, and hence not the same quality.

The US patent and Trademarks Office accepted the petition and had re-examined its legitimacy. In its Original patent on 'Basmati rice lines and grains' granted by the USPTO on September 2, 1997, Rice Tee had made as many as twenty claims. India submitted various documents to prove that the various Basmati varieties cultivated over the centuries in the subcontinent contained all the 'novel' grain attributes mentioned in the patent. As a result, on Aug, 14, 2001 the U.S. patent and Trademark office struck down large sections of the Basmati patent. A number of patent claims of the patentee were rejected by the U.S.P.T.O. But after rejection of patent on Basmati in USPTO, Rice Tee had filed applications for registering names such as 'Texmati', 'Kasmati' and 'Jasmati' as trademarks in Britain & Greece. India again filed an opposition application to these names on the ground that these names were deceptively similar to the name of Basmati' and ultimately India won.¹⁶

The ultimate aim of getting patent by Rice Tee Inc, is to fool the consumer and also to create confusion among them in differentiating between original and Spurious Basmati rice. This would be similar to a theft of collective intellectual and biodiversity heritage on Indian farmers.

¹⁵ U.S. patent No. 5,663,484

¹⁶ Arvind Padmanabhan 'Row over basmati far from over' (available at: [http:// www.rediff.com/money/ 2001/Aug/ 25 rice.html](http://www.rediff.com/money/2001/Aug/25_rice.html)).

This will also amount to a theft from Indian traders and exporters whose markets are being stolen by Rice Tee Inc.

Ethics and Biopiracy

Ethics has been defined in the Oxford Dictionary as “*Moral principles that govern a person's behaviour or the conducting of an activity*”¹⁷ This implies that there should be a proper procedure in which certain activities need to be carried out so as to avoid the conflict with someone else's right. Bio-piracy on the other hand is the infringement or unauthorized use of the biological resources per se or the traditional knowledge of the tribal or indigenous communities on biological resources without giving them their due recognition or benefit sharing. It could also include the unequal sharing of profits by the patent holder and the indigenous group.¹⁸

Bio-piracy can be said to be having a lineage to the colonial era where the ownership rights of the host country were not given any importance and their resources were illegally taken away and exploited by the greater super powers for their own benefit or personal gain. An example can be from the times when India was a colony of the British and its resources and agricultural products like pepper; spices etc. were taken away by England without any compensation to the farmers who cultivated the same.¹⁹ Though the colonisation came to an end but the mentality did not change much. The developed economies are still harnessing the profits of the natural resources or bio-resources of the developing or the under- developed countries and not giving the people of such countries their due share. Such conduct of use of information by developed countries or the rich section of the society leads to immorality, theft and is also against the right to livelihood of the tribal and indigenous people.

Bio-prospecting is a softer term for bio-piracy. A Parliamentary report by Biotechnology Australia (it was a parliamentary enquiry on the said term) defines Bio-prospecting as “*the search for naturally occurring chemical components, genes or other parts of organisms that have the potential economic value*”²⁰ It refers to the use of biological resources in a respectful and legal manner. Technically it talks about using ethical considerations while using the bio-

¹⁷<https://en.oxforddictionaries.com/definition/ethics>

¹⁸IPR, SREENIVASULU(BOOK)

¹⁹<http://theconversation.com/biopiracy-when-indigenous-knowledge-is-patented-for-profit-55589>

²⁰Biotechnology Australia, report submission to the House of representative Standing Committee on Primary Industries and Regional Service enquiry into development of High Technology Industries in Regional Australia based on bio-prospecting(2001)6

resources of the indigenous or traditional community by providing them about prior information and taking their consent for the same, seeking permission for access to information and formulating agreements for benefit sharing and also agreements for transfer of material before commencing research. The earnings from the commercial products would be used for construction of infrastructure and also for local conservation.²¹

There has always been major conflict between bio-prospecting and bio-piracy. Two questions have come to the fore. The first question is that can there be a claim or right to ownership of life? The second question which has surfaced is that if the answer to the first question is affirmative then can the corporations form developed economies own the traditional or indigenous components of the developing or under developed economies?²² The answer to the second question is a big NO. But despite these considerations bio-prospecting is never practised in its real sense and the major sufferers remain the indigenous groups. The needs for uplifting the issue of ethical concerns have been felt by international agencies and its essence have been enunciated by them in their various conventions. For example Article 27 of Universal Declaration of Human Rights state about the benefit sharing and the morality attached with use of the community's knowledge, it states:

*“(1) Everyone has the right freely to participate in the cultural life of the community, to enjoy the arts and to share in scientific advancement and its benefits.
(2) Everyone has the right to the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he is the author.”²³*

The Covenant on Economic, Social and Cultural rights also talks about the right of benefit sharing from scientific progress.²⁴ In order to protect the patenting of the traditional bio-resources without proper benefit sharing the European Patent Convention provides exception under Article 53 which states as follows:

“European patents shall not be granted in respect of:

²¹<http://theconversation.com/biopiracy-when-indigenous-knowledge-is-patented-for-profit-55589>

²²Biological resources IPR and biodiversity, Sreenivaslu and Arnab Sengupta

²³<http://www.un.org/en/universal-declaration-human-rights/>

²⁴ Article 15, of the International Covenant on Economic, Social and Cultural Rights 1966

(a) Inventions the commercial exploitation of which would be contrary to "ordre public" or morality; such exploitation shall not be deemed to be so contrary merely because it is prohibited by law or regulation in some or all of the Contracting States;

(b) Plant or animal varieties or essentially biological processes for the production of plants or animals; this provision shall not apply to microbiological processes or the products thereof;

*(c) Methods for treatment of the human or animal body by surgery or therapy and diagnostic methods practised on the human or animal body; this provision shall not apply to products, in particular substances or compositions, for use in any of these methods."*²⁵

A lot of emphasis has been laid on Part III of the Indian constitution by the judiciary which provides for protection of fundamental rights of the citizens. Article 21²⁶ of the Indian Constitution has been a lifer for the protection of human rights of the citizens of the country. In the case of *Olga Tellis v/s Bombay Municipal Corporation*²⁷ the Supreme Court declared that right to life includes right to livelihood. The court stated that right to livelihood forms an integral part of the right to life hence it would also be fundamental to the existence of the right to life of a person. This also extends to the indigenous communities for whom traditional knowledge forms part of their right to livelihood and hence very integral to their right to life. Also under Article 29²⁸ of the constitution which talks about conserving cultural or linguistic ability of a community, the traditional knowledge would fall under the cultural right and hence it caters to the ethical concerns of the traditional knowledge and hence protection of the same from bio-piracy.²⁹ In the Bt Brinjal case there have been around 291000 suicides by the farmers which indicate that strict laws need to be made for the protection against bio-piracy and present legal system does not suffice the purpose of protection.

One of other ethical concern of bio-piracy is that that there is loss to the economy of the country as huge amount of foreign exchange is obtained by exporting of biological resources or products which have a huge international market which could have been the case in case

²⁵<http://www.epo.org/law-practice/legal-texts/html/epc/2016/e/ar53.html>

²⁶Article 21 of Indian Constitution states "No person shall be deprived of his life or personal liberty except according to procedure established by law"

²⁷(1985) 3 SCC 545

²⁸Protection of interests of minorities: (1) Any section of the citizens residing in the territory of India or any part thereof having a distinct language, script or culture of its own shall have the right to conserve the same.

²⁹Sreenivaslu and karriyana

turmeric had been granted patent outside India. Similarly, another concern would be that bio-piracy also leads to the theft of opportunities of the economic development of a country. For example sometimes the companies promise to provide jobs to indigenous people for the information provided by them. But it is mostly seen that they are given menial jobs and never made aware about the research and development of their own products and hence their skills do not improve.³⁰

Another area of concern can be that there could be clashes between different communities as natural resources are spread in a wide area and the distribution of benefits amongst all can be a matter of concern as traditional knowledge is a collective right. Hence a lot of litigation crops up as to the ownership and benefit sharing of the biological resources.

Keeping the above issues in mind there needs to be proper legal framework for protection of traditional knowledge from bio-piracy both at the regional and international level which would be discussed in the preceding chapter.

Protecting Indigenous Knowledge

India has been identified as a country with mega biodiversity. Being rich in genetic resources and associated traditional knowledge, this has been used for centuries by Indian indigenous and local communities and this has been the mainstay of their existence primarily focused in key sector of food and health. It also plays a vital role in the conservation of biodiversity in India. Despite being such wealth of biodiversity and cultural resources, India is yet to have a clear and exclusive legal protection of traditional knowledge. It is only CBD and TRIPs that led Indian policy makers to look at the problems concerning the protection of traditional knowledge in India. This chapter will seek to examine some of the existing laws in India and some international standards that may possibly offer protection of traditional knowledge.

International Patent Standards

International patent standards set critical parameters for states patent legislation in the face of increased world trade and globalization. The parameters are intended to ensure that

³⁰<http://lawmantra.co.in/biopiracy-the-vanishing-point-of-traditional-knowledge-by-sidhant-tigga-and-sachin-mishra/>

domestically adopted patent legislation does not become a barrier to legitimate trade. International patent standards have been enforced by the Paris Convention since 1883. The objective of the convention was to allow member states to adopt their own patent protections and conditions, while establishing basic uniform intellectual property standards that apply throughout the international community." Traditional knowledge is afforded no protection under current international patent standards. Under the current standards, anyone can patent traditional knowledge without providing any financial compensation to the actual inventors. The lack of documentation of traditional knowledge has created a loophole under international patent standards. Because traditional knowledge is "new" to the countries where it is imported, foreign patent applicants can obtain Patents on traditional knowledge while domestic indigenous applicants cannot. These circumstances make the adoption of domestic legislation necessary, given that international patent standards aggravate the exploitation of traditional knowledge, rather than prevent it³¹.

The TRIPS Agreement

The treaty agreement on Trade-Related Aspects of Intellectual Property Rights ("TRIPS") is a product of the World Trade Organization (WTO), established by industrialized nations to promote free trade under a global trading system with an objective to encourage the constant evolution of ideas by providing ample protection to intellectual property rights owners and rewarding their innovativeness and ingenuity. The TRIPS agreement is recognized as an "impressive" document for its "comprehensive scope and coverage," leading some to recognize it as the "most important multilateral instrument in this field. " Unlike the Paris Convention, the TRIPS agreement created uniform patent standards, which is considered one of its most significant improvements over the Paris model. Additionally, as part of the WTO, the TRIPS agreement is tailored to the needs of industrialized nations; this puts pressure on developing countries that wish to conduct trade with these nations to conform to TRIPS standards. Article 27 of the TRIPS agreement lays out the requirements for patentability. Paragraph (1) of article 27 states that "patents shall be available for 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."³² " A footnote to article 27 clarifies that member states may interpret

³¹ Biopiracy-The vanishing point of Traditional Knowledge, Anand Mishr

³² https://www.wto.org/english/tratop_e/trips_e/intel2_e.htm

"inventive step" and "capable of industrial application" to refer to the more familiar patent terminology of "non-obvious" and "useful. These broad standards establish "a general principle of eligibility" for patents.

The TRIPS Agreement and Traditional Knowledge

Despite creating many uniform standards, the TRIPS agreement fails to protect traditional knowledge because it does not establish a universal rule for novelty. This allows countries to adopt their own standards of novelty and prior art. Accordingly, countries typically take an ethnocentric approach to determining novelty and issue patents for "inventions" that may be common in another country. Moreover, because traditional knowledge is still generally transferred by oral tradition, it is not found in printed publications that patent examiners look to during prior art searches, and is thus considered novel and patentable. Therefore, to traditional knowledge holders, the TRIPS agreement, like the Paris Convention, fails provide patent protection largely by granting too much discretion to individual states in shaping their own domestic patent law.³³

Convention on Biological Diversity (CBD)

The objective of CBD is to conserve biological diversity and to provide appropriate access to this resource for utilization. Signatories are required to respect, preserve and maintain the knowledge innovations and practices of indigenous and local communities relevant for the conservation of Biodiversity. It also encourages equitable sharing of benefits arising out of the use of biodiversity. It also recognizes states sovereignty over its own resources, thus getting benefited from these resources without the prior permission of such state is not permissible.

Loopholes within CBD

Although conservation of biological resources has been considered as important in CBD, exploitation of biological resources can run counter to conservation and sustainable use as clear cut standards for sustainable use have not been defined. Moreover, CBD is subject to national and international legislations, which raises the issue that between TRIPs and CBD which holds legal priority. Legal opinion would perhaps be that between the two, TRIPs being the later treaty would supersede CBD in case of conflicts. However, given that CBD deals much more

³³ Graham Dutfield, *TRIPS-Related Aspects of Traditional Knowledge*, 33 Case W. Res. J. Int'l L. 233 (2001) Available at: <http://scholarlycommons.law.case.edu/jil/vol33/iss2/4>

with the protection of public interest and morality, which TRIPs acknowledges as valid grounds for any measures that a country would take, it could be argued that CBD's provision should supersede those of TRIPs. This interface between TRIPs and CBD is yet to be tested in international legal arena. The CBD unfortunately is at a serious disadvantage, as it does not have a dispute resolution mechanism of its own, unlike WTO as in TRIPs. Besides, CBD in Article 8(j) requires the countries to respect and protect indigenous and local community knowledge and ensure its equitable sharing of benefits arising out of use of such resources. Various parties involved in the sharing mechanism can interpret this provision differently³⁴.

Thus, both have tried to develop a system of protection of traditional knowledge globally but the provision of TRIPs and CBD needs to be strengthened in terms of providing incentives for disclosure and dissemination of valuable traditional knowledge. This can be achieved by linking grassroots knowledge systems with the global perspective for financing the commercial use of biological diversity.

Indian Scenario

Indian Constitution Provisions and Traditional Knowledge

The Indian Constitution does not address directly to protect the traditional knowledge but Article 45(A) refers to the State's obligation to protect and improve the environment and safeguard the forest and wildlife of the country. Also Article 51(A)(g) impose a duty upon the citizen of India to protect and improve the environment, including forests, lake rivers and wildlife. As regards protection of TCEs, Article 29 of the Constitution recognizes as a "Fundamental Right" (Part III) the protection of the culture of minorities. According to Article 29, "any section of the citizens residing in the territory of India or any part thereof having a distinct language, script or culture of its own shall have the right to conserve the same." Thus this is possible to protect the folklore of the distinct group of people in India based on this provision. However, the majority of the TCEs existing and misused now in India belong to small communities who do not come under the scope of the aforementioned constitutional

³⁴ Javier Garcia, *Fighting Biopiracy: The Legislative Protection of Traditional Knowledge*, 18 LA RAZAL.J. 5 (2007).

Available at: <http://scholarship.law.berkeley.edu/blrlj/vol18/iss1/2>

provision. The only other general provision in the Constitution that can be identified as a source to protect TCEs is Article 51 A (f) of the Constitution. It is the fundamental duty of every citizen of India "to value and preserve the rich heritage of our composite culture." Furthermore, considering the special cultural identity of the tribal population in India, the Constitution envisages special protection of the indigenous communities. The areas where there are only tribal communities, as per Article 371 read with the Schedule VI of the Constitution, are permitted to have separate Autonomous Councils for self-governance in accordance with their customary laws.

Biological Diversity Act, 2002

Biological Diversity Act was passed in the year 2002 which is intended to provide for conservation of biological diversity, sustainable use of its components and fair and equitable sharing of the benefits arising out of the use of biological resource and knowledge. It primarily addresses access to genetic resources and associated knowledge by foreign individuals, institution and companies, which are intended to ensure equitable sharing of benefit arising out of the use of resources and traditional knowledge. This power is vested with NBA. Under this, foreigner is prohibited from obtaining any biological resource originating in India or its associated knowledge for research or for any commercial gain without the prior approval of the NBA. Hence in the light of *Bt Brinjal Case* (as discussed in Chapter I), it is important to mark the point that the 'principle of prior and informed consent' has been sought directions from the court by the petitioner for its meaningful compliance and made mandatory for all decisions impacting biodiversity, associated traditional knowledge and livelihood. In this case, there was an urge the court to direct the ministry to institute appropriate systems, procedure and norms to protect India's biodiversity in strict conformity with the Biological Diversity Act, Panchayati Raj Act, 1992 and Nagarpalika Act, 1992 and Scheduled Tribes and Other Traditional Forest Dweller (Recognition of Forest Rights) Act, 2006 and Environment Protection of Act, 1986 among others.

Also, the Indian Biodiversity Act does not provide any provision relating to enable local bodies to enter into agreement with the person claiming access. Moreover, there is no provision obligating the local bodies to enter into such agreements only with the prior informed consent and participation of the holders of knowledge particularly indigenous and local communities

in cases where the knowledge belong to them. Furthermore, unfortunately, the Act is also silent about the ownership and control of genetic resource and associated traditional knowledge by the indigenous and local communities wherever it is clearly associated with them. It must be pointed that some scholars believe the emphasis of the Indian Biodiversity Act is more on the international trade in biological resources, neglecting the rights and interests of local and indigenous communities.

The Protection of Plant Varieties and Farmer's Right Act, 2001

PPVFR Act was passed in the year 2001 with the objective of intellectual property protection of plant varieties and protection of rights of farmers. The farmer's right arises from their role in conserving, improving and making available plant genetic resources for the development of new plant varieties. And it is to stimulate investment in plant breeding research, promote development of new plant varieties, growth of seed industry and availability of high quality seed and planting material to farmers for an accelerated agriculture development.

But despite being a progressive legislation, the plant varieties act faces a number of shortcomings as it remains unclear whether farmers will ever be able to benefit from the relatively generous provisions of the act while there exists a framework in place for the registration of farmer's varieties, very few farmers if any will be able to benefit from its provision because their variety generally do not meet the criteria of distinctiveness, uniformity and stability. Most importantly, there is no provision recognising the ownership of traditional knowledge with the community.

Geographical Indication of Goods (Registration and Protection) Act, 2003

This act is a *sui generis* legislation passed with an aim to protect the geographical indications of the country where it is traditionally found. It advance product standards and provide cataloguing and categorization and enforces regulation³⁵. Basmati Rice is one of the examples set for the geographical indication in regards to this. But there is miles to go before one think to go to sleep, there is lot to be done to eradicate this crisis from the indigenous community. In the wake of the problems with patents that India has experienced in last few years, the

³⁵ <http://ssrn.com/abstract=1143209>

importance of enacting laws for conserving biodiversity and controlling piracy as well as intellectual protection legislation that conform to international laws has been realized. There is a widespread belief that RiceTec Inc., as discussed in the chapter I, took out a patent on Basmati only because of weak, non-existent Indian laws and the government's philosophical attitude that natural products should not be patented. According to some Indian Experts in the field of genetic wealth, India needs to formulate a long-term strategy to protect its bio-resources from future biopiracy and or theft.³⁶ India and Pakistan have agreed to tackle the crisis jointly to have a strong case against RiceTec Inc. Following the Basmati rice crisis, India formulated legislation in the form of the Geographical Indications of Goods (Registration and Protection) Act, 1999, however, the law in this regard is yet to solidify and form a strong foundation. Also, raining is required to equip emerging and new lawyers in the legal fraternity with tools to combat these pressing issues.

The Patent Act, 1970

The patent act has been amended thrice since 1970 to conform full obligation under TRIPs agreement 2005. Notable change in regards to Traditional knowledge of the bill amended should be seen in the context of the overt recognition given by the state to the importance of protecting indigenous knowledge. Finally, the state has woken up to make necessary changes in the legislation to provide the protection to the indigenous people, which can protect from usurpation and unfair exploitation. Though the Patent Amendment Bill has seemingly provided for the protection of Indigenous knowledge, it leaves several loopholes through which biopiracy and usurpation of IK could be easily practised. Hence it is just not enough to provide for the protection of IK by introducing a single clause prohibiting patents derived from IK.

The Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006

Like other legislative framework this act also tries to protect the rights of the scheduled tribes and traditional forest dwellers carrying traditional knowledge. Sec 3 (k) states: right to access

³⁶ <http://www.rediff.com/business/1998/mar/23rice.html>.

to biodiversity and community right to Intellectual Property and traditional knowledge related to biodiversity and cultural diversity.

Among all the debates concerning to the Traditional Knowledge, Kerala was the first state to implement the laws relating to the Traditional Knowledge which depict that the need for the protection of the Traditional knowledge in the diverse form of legislation has been adopted in the Kerala.

POLITICAL CONTROVERSIES SURROUNDING BIOPIRACY

There has been a lot of debate over control and ownership of the biological resources. On one hand the developed nations like United States urge the other states to provide stricter laws for patent and protection of traditional knowledge and biological resources. On the other hand the developing nations which are rich in biodiversity are demanding share in the profits from the use of resources and they also claim sovereignty over the biodiversity of their lands. This has become a major bone of contention between the developed and developing countries in this arena of globalization. The two main legal instruments which are the center of perennial conflict are Trade Related aspects of intellectual Property Rights (TRIPS) and Convention on Biological Diversity (CBD).

One of the main problems with India and other developing states is that in order to comply with the provisions of WTO the countries it needs to relax its laws related to trade and investment and hence attract foreign investment. There are also opinions against such relaxations. India finds itself in a dilemma as there is a conflict to provide sovereignty over its natural resources and also comply with international notions of trade and intellectual property laws³⁷. Biotechnological developments are instrumental in the economic growth of India³⁸. Despite protests India signed TRIPs in 1995 and is also a signatory to the CBD Convention. The former obligates India to provide for patent and *sui generis* protection to the biodiversity available in the country. The latter provides the country with the right of sovereignty over its natural resources. Hence, the conflict between the two instruments can be made out. TRIPs on one hand provide for patent rights to individuals for innovation in form of traditional property right

³⁷ See Meetali Jain, Global Trade and the New Millennium: Defining the Scope of Intellectual Property Protection of Plant Genetic Resources and Traditional Knowledge in India, 22 HASTINGS INT'L & COMP. L. REV. 777, 777 (1999)

³⁸ See Unscientific Approach, ECON. & POL. WEEKLY, Jan 9, 1999

law. While CBD provide for protection and conservation of resources through community based protection.

In order to resolve the above issue both sides of the world i.e. the developed and under developed and developing economies need to work in harmony in order to cater to the greater good of all. The United States of America being a super power has a duty to care towards the other less developed economies and not to encroach or infringe their rights by interpreting TRIPs Agreement in a manner beneficial to them alone. In case it does not restrict its activities of unfairly benefitting its own economy disregarding the basic economic and social rights of the developing and under developed economies then its activities could come under bio-piracy instead of bio-prospecting. On the other hand the developing economies should strengthen their patent law system in order to afford better protection for its people and to keep up with the fast growing economies of the world. It is only through this mutual cooperation that the rights of indigenous people can be protected against this evil of bio-piracy³⁹.

CONCLUSION

Traditional knowledge forms a very important part of the Indian culture. The livelihoods of a large number of people depend on the same. India being a welfare state has the obligation to provide protection and equality to all its citizens which include indigenous people. The present legal regime is insufficient and inadequate for protection of traditional knowledge. Though the concept of benefit sharing has echoed in some of the acts but the country needs a centralized act for protection of the traditional knowledge. Traditional knowledge is a collective right thus the Biological Diversity Act and other related acts are silent about recognising the right of ownership to whom the indigenous knowledge belongs to. Moreover, the traditional knowledge and indigenous people are not aware about the stealing of the knowledge they have been using until and unless some committee or NGO's make them aware about the stealing of the knowledge of the local people. Thus, NGO work as an alarm to this in protecting the traditional knowledge of the indigenous people. Hence for the protection of rights of indigenous people the acts are silent in some areas that need to be addressed and only the work of NGO does not

³⁹ See Insoon Song, Old Knowledge into New Patent Law: The Impact of United States Patent Law on Less-Developed Countries, 16 IND.INT'L & COMP. L.. REV. 292-93 <
<http://mckinneylaw.iu.edu/iiclr/pdf/vol16p261.pdf>>

suffice the purpose of the act for the protection of indigenous knowledge, therefore, need for more clear form of legislations.

The following could make the system more efficient:

The Traditional knowledge digital library should be made more effective by collaborating with more and more N.G.Os so as to make the traditional knowledge base stronger. The local community should be encouraged to participate in combating bio- piracy and the indigenous people should be made aware of their rights and how are they being violated. Free legal aid should be provided to them in case they want to challenge some patent or violation of their traditional knowledge.

Traditional knowledge is such an area of law in which not many lawyers or judges are specialized. So special courts should be formed for the speedy redressal of issues relating to traditional knowledge and their communities. Experts should also be made part of the team in order to hasten the work and also keep a check that big corporate houses do not get away with patents through unfair means.

Article 342 of the Constitution of India states that President of India has the authority to specify Scheduled tribes in consultation with the Governor of a state. Similarly, laws should be enacted so as to identify the cultural and traditional knowledge of these people in order to preserve them.

The Digital libraries of all the states should be connected internationally and before granting of patents should be searched thoroughly so as to avoid bio-piracy of traditional knowledge.

The multinational corporations and other organizations should be made to compulsorily follow rules which are beneficial to such communities and this should be made part of their corporate social responsibility.

The international regime should be made more effective so as to include within its purview the developed nations as most of the violations of traditional knowledge or bio-piracy has been done by them. There is a need for more effective cooperation at international level between developing and developed economies so as to eradicate this menace of bio-piracy.