

PROTECTING TRADITIONAL KNOWLEDGE: A CRITICAL STUDY OF EMERGING LEGAL PERSPECTIVES IN INDIA

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BHIMRAO
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2015

DECLARATION

I hereby declare that research work embodied in this Ph.D. thesis entitled **“Protecting Traditional knowledge: A critical study of emerging legal perspectives In India”** carried out by me under the supervision of Prof. S.K. Bhatnagar, Department of Human Rights, School for Legal Studies, Babasaheb Bhimrao Ambedkar University, Lucknow (U.P.) is an original work and it has not been previously submitted in part or full for any other degree or diploma in this or any other University.

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PREFACE

India is a biodiversity rich country. It is one of the 17 countries which are known as megadiverse countries. These countries, among 194 countries of the world, possess 70 % of world's biodiversity. But India has a distinct identity because India has some of the world's most biodiverse regions. India encompass a wide range of ecozones—desert, high mountains, highlands, tropical and temperate forests, swamplands, plains, grasslands, areas surrounding rivers, as well as island archipelago. It hosts 3 biodiversity hotspots: the Western Ghats, the Himalayas and the Indo-Burma region. These hotspots have numerous endemics species. India is very rich ecologically, biologically and culturally. India's genetic variation, ecosystem variation, and species variation is unmatched in the world. India contains a great wealth of biological diversity and associated Traditional Knowledge. According to botanical survey of India and zoological survey of India, over 47,000 species of plants and around 89,000 species of animals have been recorded, respectively which make India a repository of natural wealth. India is rich in almost every category of biodiversity, it has 75,000 identified medicinal plants which are unique to India. One of eighteen megadiverse countries, it is home to 7.6% of all mammalian, 12.6% of all avian, 6.2% of all reptilian, 4.4% of all amphibian, 11.7% of all fish, and 6.0% of all flowering species. Sixteen thousand and five hundred varieties of rice are cultivated in India. In this way India possess 7-8 % of earth's biodiversity which is nowhere in the world. India not only has this biodiversity but here exists a rich Traditional Knowledge associated with it and generally, most of the knowledge has been freely accessible to everyone. Traditional knowledge (TK) is integral to the identity of most local communities. It is a key constituent of a community's social and physical environment and, as such, its preservation is of paramount importance.

The way modern intellectual property right regime is growing and expanding its feet, Traditional Knowledge is facing very complex challenges. TK is being misappropriated and bio-pirated by western countries. At international level intellectual property regime has been one sided in favour of rich and industrialist countries and Traditional knowledge of biodiversity rich countries has not been recognized at par with intellectual property rights of western countries. It has resulted into huge commercial and moral exploitation of the TK holders as well as the respective biodiversity rich countries.

The Intellectual Property Rights regime needs to be fine tuned in such a way that it can bolster the cultural identity of traditional and indigenous communities and give them greater say in its management. This calls for a comprehensive strategy with community, national, regional and international dimensions. This framework should ensure that the control and sovereignty over biological resources rest with the local community and the respective nations and that they receive adequate compensation when these resources are utilized by outsiders. The present study aims to arrive at such an IPR regime for balancing the rights of local people with the obligation to preserve it. This thesis explores the present problems of TK holders, international and national scenario on Traditional Knowledge. It tries to trace the obscure areas and ultimately it gives some suggestions for effective protection of Traditional Knowledge with special reference to India keeping in mind the provisions of TRIPs, CBD and various other international norms.

For this purpose, the researcher has divided this research into seven chapters. *First Chapter* of the thesis introduces the subject matter and its research methodology. In this chapter, the researcher also tries to test his hypothesis in the light of the statement of the problem and objectives of the research. The *second chapter* discusses about the meaning and concept of the Traditional Knowledge. It focuses upon the basic issues related to Traditional Knowledge such as its subject matter,

characteristics, importance, importance of Traditional Knowledge in medicinal field, its kind, justification for protection, its commercial value, and misappropriation and case illustrations. *Third chapter* talks about the international positional of the Traditional Knowledge. It illustrates the international position of Traditional Knowledge and makes a critical analysis of them. *Fourth chapter* of the thesis tries to find out whether is it possible to protect Traditional Knowledge through existing forms of intellectual property rights and traces the possible ways to protect the Traditional Knowledge in existing IPR regime. *The fifth* chapter elucidates the existing position and protection available to Traditional Knowledge in India. An attempt has been made to suggest legislation for protection of Traditional Knowledge in *sixth chapter*. The *last chapter* of the thesis produces concluding observations on various obscure areas and tries to give some suggestions.

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LIST OF ABBREVIATIONS

ABC	Activity Based Cost
ABM	Activity Based Management
ABS	Access and Benefit Sharing
AIPA	American Inventors Protection Act
APEC	Asia-Pacific Economic Cooperation
ASEAN	Association of South East Asian Nations
ASI	Anthropological Survey of India
AYUSH	Department of Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy
BMC	Biodiversity Management Committee
BPAI	Board of Patent Appeals and Interferences
BPTTT	Bureau of Patents, Trademarks, and Technology Transfer
CAFTA DR	Central American Free Trade Agreement – Dominican Republic
CBD	Convention on Biological Diversity
CIH	Intangible Cultural Heritage
CIRPA	Community Intellectual Rights Protection Act
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
COP	The Conference of the Parties
CRADA	Cooperative research and development agreement
CSIR	South African Council for Scientific and Industrial Research
CSIR	Council of Scientific & Industrial Research
DBT	Department of Biotechnology
EC	European Communities
EDV	Essentially Derived Varieties
EPO	European Patent Office
ETC Group	Action Group on Erosion, Technology and Concentration
EU	European Union
FAO	Food and Agriculture Organization
FAST	First Action System for Trademarks

FDA	Food & Drug Administration
FTA	Free Trade Agreement
GI	Geographical Indicator
GI Act	The Geographical Indications of Goods (Registration and Protection) Act, 1999
GM Seeds	Genetically Modified Seeds
GMO	Genetically Modified Organism
GRRF	Genetic Resources Recognition Fund
ICBG	International cooperative biodiversity group
ICCs	Indigenous Cultural Communities
ICTA	International Centre for Tropical Agriculture
IIBF	International Indigenous Forum on Biodiversity
ILC	Indigenous Local Community
ILO	International Labour Organization
INDECOPI	Inventions and New Technology of the National Institute for the Defense of Competition and Intellectual Property
IP	Intellectual property
IPC	International Patent Classification
IPOs	International Patent Office
IPR	Intellectual property Rights
IT PGRFA	International Treaty on Plant Genetic Resources for Food and Agriculture
JPO	Japanese Patent Office
LDC	Least Developed Country
MAT	Transactions are on Mutually Agreed Terms
MTA	Material Transfer Agreement
NBA	National Biodiversity Authority
NCIP	National Commission on Indigenous Peoples
NGOs	Non- Governmental Organizations
NIF	National Innovation Foundation
NP	Nagoya Protocol
PCT	Patent Cooperation Treaty
PGRFA	Plant Genetic Resources For Food and Agriculture

PIC	Prior Informed Consent
PITAHC	Philippine Institute of Traditional and Alternative Health Care
PVPFR Act	Protection of Plant Variety and Farmers Right Act, 2001
SC	Source Country
SMTA	Standard Material Transfer Agreement
SPLT	Substantive Patent Law Treaty
SRISTI	Society for Research and Initiatives for Sustainable Technologies and Institutions
TAMA	Traditional and Alternative Medicine Act, 1997
TCEs	Traditional Cultural Expressions
TEK	Traditional Ecological Knowledge
TK	Traditional Knowledge
TKDL	Traditional Knowledge Digital Library
TLT	Trademark Law Treaty
TRIPS	The Agreement on Trade-Related Aspects of Intellectual Property Rights
UN	United Nations
UNDRIP	UN Declaration on the Rights of Indigenous People
UNESCO	United Nations Educational, Scientific and Cultural Organization
UPOV	International Union for the Protection of New Varieties of Plants
USPO	United States Patent Office
USPTO	United States Patent and Trademark Office
WHO	World Health Organization
WIPO	World Intellectual Property Organization
WIPO FFM	WIPO Fact-finding Missions
WIPO IGC	Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore
WIPO SCP	WIPO's Standing Committee on the Law of Patents
WTO	World Trade Organization

CHAPTER-I

INTRODUCTION

1.1 INTRODUCTION

Traditional and indigenous knowledge¹ form the back bone of cultural heritage. Traditional Knowledge (TK) is the knowledge of people in a given society, developed over time, and handed down from one generation to another. It is usually transmitted orally from generation to generation. It can be understood as tradition-based literature, artistic or scientific works, performances, inventions and discoveries, designs, marks, names and symbols; undisclosed information and other tradition-based knowledge creation. It is found in community laws, local languages, artistic works, beliefs, rituals and biodiversity. The knowledge related to agriculture, medicine, traditional festivals and cultural expression forms part of TK. The knowledge which is used by people is carried forward because of the values embedded in it. It is rich, as it is time tested and has withstood real-life challenges.

At present, Traditional Knowledge is embroiled in various problems

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1. M. Viergever, in “Indigenous Knowledge: An Interpretation of Views from Indigenous Peoples”, (1999), in L. M., Semali, J. L. Kincheloe, (eds), “What is Indigenous Knowledge Voices from the Academy”, Palmer Press, New York, p. 333-343, writes that though the words Traditional Knowledge and Indigenous Knowledge appears to be synonyms and can be used in place of other but still there exist a very thin line which differentiates the both. He observes –

“The difference between traditional and indigenous knowledge peoples’ communities is that indigenous knowledge peoples’ communities, despite the pressure to integrate within the larger society of the national states of which they are part, still have their own distinct cultures. Local communities, on the other hand, usually do not have a cultural identity that sets them apart from the large society, or at least not to the same extend as in the case of indigenous peoples’ communities.”

and faced with many challenges. Its ownership is one such crucial challenge. The community and the society at large is the owner of Traditional Knowledge as it has been derived and used by the people for generations. The community at large has to reap the benefits of Traditional Knowledge. No individual has the exclusive right to own it unless they invent new things that add to the existing stock of knowledge. But, number of times some people misuse the same knowledge as claim on their own knowledge. It is primarily due to the non-availability of Traditional Knowledge in a documented form. Lack of documentary evidence and non-availability of information about existing Traditional Knowledge across the globe are serious hurdles to check the misappropriation of Traditional Knowledge. Individual researchers and research institutions often take advantage of non-availability of records on Traditional Knowledge by seeking protection for the patents derived from the Traditional Knowledge thereby depriving the bona fide beneficiaries. Finding out whether the applications for grant of patents for new inventions have similarities with Traditional Knowledge is a Herculean task. The grant of patents in US for discovery of certain properties of *Basmati*, *Neem*, *Rice strains* and *Turmeric* are glaring examples of the Indian culture and Traditional Knowledge. India brought this fact to the notice of the concerned authorities in US and succeeded in nullifying the patents granted. This is one example of gross misuse of Traditional Knowledge due to paucity of information.

Protection of Traditional Knowledge is another significant issue. There are no definite international treaties to protect Traditional Knowledge. International treaties related to the Conservation and Sustainable Use of Plant Generic Resources for Food and Agriculture and the WIPO initiations on protection of Traditional Knowledge and folklore are some of the guiding

factors for safeguarding Traditional Knowledge. The concept of “*sui generis*” systems envisaged by the TRIPS Agreement is another tool in the hands of people endorsing the protection of Traditional Knowledge. The Convention on Biological Diversity is another instrument which strives to safeguard some classes of Traditional Knowledge. The Convention suggests a “benefit sharing mechanism” to utilize agencies and government with private partnership may imitate some action. A separate fund can be set up to train people and bring awareness among the communities. The public domain should be made stronger by equipping it with well written laws and a strict enforcement mechanism.

1.2 STATEMENT OF PROBLEM

1. The main problem experienced by indigenous people is that the Traditional Knowledge does not satisfy the requirements of intellectual property protections.
2. The nature of Traditional Knowledge is such that more of it is transmitted orally than written down. This poses particular problems when parties not authorized by the holder of that knowledge seek to obtain IPRs over it. In the absence of any accessible written record, a patent examiner in another country is unable to access documentation that would challenge the novelty or inventiveness of an application based on Traditional Knowledge.
3. The only option for an aggrieved party, be it the holders of the knowledge, or someone representing them, is to challenge the patent during the granting process or after grant, where national laws permit. It is extremely difficult and costly for developing countries to monitor and challenge IPRs issued all around the world.

4. Where intellectual property protection could potentially apply to such knowledge, the prohibitive costs of registering and defending a patent or other intellectual property right may curtail effective protection.
5. There has been a clear bias in the operation of these laws in favour of the creative efforts of corporations, for example, pharmaceutical and other industries in industrialized nations.
6. Within the context of scientific progress, modern intellectual property laws have allowed these industries to monopolize the benefits derived from their use of indigenous knowledge with disregard for the moral rights and material (financial) interests of indigenous peoples themselves.
7. Biopiracy can also be considered one of the main problems. The term “biopiracy” is often used to describe the misappropriation of knowledge and/or biological materials from traditional communities. With today’s rapidly globalizing IPR regime, situations of biopiracy are becoming increasingly evident. For example an American citizen owned a patent on the well known and commonly used Amazonian plant *ayahuasca*. Traditional Andean uses of *maca* (*Lepidium meyenii*) for increased fertility and the Indian use of *neem* as a pesticide have been patented in name of profit for Western companies. A major concern is that Western corporations will continue to adapt, incorporate, build upon, or directly claim indigenous knowledge without acknowledgement or compensation for the communities that developed the knowledge.

1.3 OBJECTIVES OF RESEARCH

1. To give a generally agreed definition of the term "Traditional Knowledge" and the determination of the policy objectives of the protection of Traditional Knowledge. So, First objective of the research is to conceptualize these terms

taking into consideration the perspective of subaltern.

2. Further objective of this research is to clarify the basic issue i.e. holistic nature of Traditional Knowledge and its intrinsic value, including its social, spiritual, economic, intellectual, scientific, ecological, technological, commercial, educational and cultural value.

3. The researcher will try to find out the possible ways for prevention of bio piracy.

3. To find out that what could be the possible options for the protection of Traditional Knowledge under existing intellectual property rights regime.

4. To analyze the present status of Traditional Knowledge in India. The objective of the research shall be two fold, first, to understand the subaltern perspective and second, to understand the perspective of modern rational law.

5. To provide some insights into the dynamics of legislative protection of Traditional Knowledge.

1.4 HYPOTHESIS

1. *Due to the absence of a uniform definition of Traditional Knowledge, there are problems in its identification and protection:* The researcher agrees with this hypothesis. There is no any globally agreed definition of Traditional Knowledge exist. Various conventions, international organization and instruments define the term differently.² In a report of WIPO, it has been said that Traditional Knowledge is highly diverse and dynamic in nature, so it may not be possible and feasible to develop a singular, exclusive and complete definition for ‘Traditional Knowledge’.³ The main issues which have

2. Detailed discussion has been made in Chapter 2 and concluding remarks of this thesis

3. WIPO, “Intellectual Property Needs and Expectations of Traditional Knowledge Holders”, WIPO Report on Fact-Finding Missions on Intellectual Property and Traditional Knowledge (1998-1999) (WIPO, 2001).

prevented a consensus from happening, on definitional aspects of Traditional Knowledge at international level are: its diverse subject matter, problems in identification of beneficiaries and problems in evolving a common consensus among the all with reference to implementation and enforcement mechanism. As in absence of any concrete definition of Traditional Knowledge, there exist problems in identification of the real beneficiaries; it's opposite it also true. Till the categories of TK holder's and real beneficiaries are not identified, it will be very difficult to give a singular definition.

2. There is lack of proper mechanism for identifying the ownership of Traditional Knowledge: The researcher agrees with this hypothesis. There have been continuing debates as to the ownership rights of the Traditional Knowledge. Some try to justify the protection of Traditional Knowledge under existing intellectual property rights and some outside of it, meaning thereby first kind of debate on ownership of TK is between individual rights and group rights. Second kind of debate is on the national ownership of the Traditional Knowledge wherein discussions are taking place on community rights, regional rights, state's rights and ownership rights under the sovereign rights of a nation. Since these discussions have not reached to any final concrete conclusion, therefore, there has been lack of a proper mechanism for identifying the ownership of Traditional Knowledge.

3. Present I.P.R. regime is being misappropriated because there is no sufficient protection to Traditional Knowledge: The researcher agrees with this hypothesis. The TRIPS Agreement requires a review of Article 27.3(b) which deals with patentability or non-patentability of plant and animal inventions, and the protection of plant varieties. Paragraph 19 of the 2001 Doha Declaration has broadened the discussion. It says the TRIPS Council

should also look at the relationship between the TRIPS Agreement and the UN Convention on Biological Diversity, the protection of Traditional Knowledge and folklore. It adds that the TRIPS Council's work on these topics is to be guided by the TRIPS Agreement's objectives (Article 7) and principles (Article 8), and must take development issues fully into account. Though various working groups and organizations are making efforts in this field but so far, no effective measures could be taken to protect the Traditional Knowledge either at the international level or at the national level.

4. *Biopiracy cannot be checked in the absence of a proper and efficient administrative and legal mechanism for its prevention and control:* The researcher agrees with this hypothesis. Traditional Knowledge is being misappropriated just because of the reason that Traditional Knowledge has not been given sufficient protection in present IPR regime. Though Article 27.3 (b) makes some arrangement for protection of Traditional Knowledge but that is not sufficient because it is not protected the way western science has been protected. Mostly the bio-piracy of Traditional Knowledge is happening in present system of IPR only. Had Traditional Knowledge been recognized in the IPR instruments sufficiently, bio-piracy of Traditional Knowledge would not have been possible. Unless and until proper and efficient administrative and legal mechanism at international and national level is developed, bio-piracy cannot be prevented from happening.

5. *Intellectual property rights can benefit Traditional Knowledge holders by promoting both their material and moral interests, if sufficient measures are taken in to account:* The researcher agrees with this hypothesis. It is the observation of the researcher that if Traditional Knowledge is given sufficient protection in IPR instruments, this type of knowledge can very well be protected from being misappropriated. The researcher suggests the various

ways to protect the Traditional Knowledge in the existing regime by which material and moral interests of the concerned can be protected. The detailed discussion in the regard has been made in Chapter IV.

6. *Enactment of a 'Sui generis' legislation can be a solution to the problem:*

The researcher partially agrees with hypothesis. The TRIPs agreement leaves room for the biodiversity rich developing and least developed nations to enact a *sui generis* legislation and to protect it. This option can be utilized for the protection of Traditional Knowledge but defensive protection such as documentation of Traditional Knowledge is a pre-requisite. Till sufficient measures are not taken at international level, *sui generis* system alone cannot provide the desired level of protection. In this regard international and regional co-operation is also required and several legislations affecting the protection of Traditional Knowledge, are also needs to be amended. The researcher discusses these points in detail in Chapter VII.

1.5 RESEARCH METHODOLOGY

All the primary as well as secondary sources are to be utilized to make the study advanced, orderly and methodical. Relevant provisions of TRIPs, various conventions, reports, articles, Judicial decisions, International, National, Constitutional norms and national measures are to be taken as important research tools. The hypothesis will be evaluated on the basis of ground reality, legal provisions, practices and court opinions. A critical analysis would be made to evaluate the recent initiatives and measures taken at international level, efforts done by biodiversity rich countries especially by India for protection of Traditional Knowledge.

1.6 PLAN OF THE WORK

The *first Chapter* of the thesis introduces the subject matter and research methodology. In this chapter, the researcher also tries to test his

hypothesis in the light of the statement of the problem and objectives of the research. The *second chapter* discusses about the meaning and concept of the Traditional Knowledge. It focuses upon the basic issues related to Traditional Knowledge such as its subject matter, characteristics, importance, importance of Traditional Knowledge in medicinal field, its kind, justification for protection, its commercial value, and misappropriation and case illustrations. *Third chapter* talks about the international positional of the Traditional Knowledge. It illustrates the international position of Traditional Knowledge and makes a critical analysis of them. *Fourth chapter* of the thesis tries to find out whether is it possible to protect Traditional Knowledge through existing forms of intellectual property rights and traces the possible ways to protect the Traditional Knowledge in existing IPR regime. *The fifth* chapter elucidates the existing position and protection available to Traditional Knowledge in India. An attempt has been made to suggest legislation for protection of Traditional Knowledge in *sixth chapter*. The *last chapter* of the thesis produces concluding observations on various obscure areas and tries to give some suggestions.

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CHAPTER-II

MEANING AND CONCEPT OF TRADITIONAL KNOWLEDGE

2.1 INTRODUCTION

Traditional Knowledge refers to the knowledge, innovations and practices of indigenous and local communities around the world, developed from experience gained over the centuries and adapted to the local culture and environment, Traditional Knowledge is transmitted orally from generation to generation. It tends to be collectively owned and takes the form of stories, songs, folklore, proverbs, cultural values, beliefs, rituals, community laws, local language, and agricultural practices, including the development of plant species and animal breeds.⁴ Sometimes it is referred to as an oral tradition for it is practiced, sung, danced, painted, carved, chanted and performed down through millennia. Traditional Knowledge is mainly of a practical nature, particularly in such fields as agriculture, fisheries, health, horticulture, forestry and environmental management in general. It is rich as it is time tested and has withstood real-life challenges. The community and the society at large is the owner of Traditional Knowledge as it has been derived and used by the people for generations. Following are the some examples of Traditional Knowledge:

4. This definition was adopted in 8th COP (Conference of parties) of CBD which took place in March 2006, in Curitiba, Brazil.
Available at http://nafaforestry.org/forest_home/documents/TKdefs-FH-19dec06.pdf
(Accessed on 16-06-15).

- Use of ‘turmeric’ for generations, not only as an essential ingredient in many Indian dishes but as ‘a classic grandmother’s remedy’ for healing of a wound, as an anti-parasitic agent, anti-septic and as a blood purifier in India.
- Use of ‘neem’ for blood morbidity, biliary afflictions, itching, skin ulcers, burning sensations, pthysis, leprosy, intestinal helminthiasis, respiratory disorders, constipation and also as a general health promoter in India.
- The use of *plao-noi* in Thailand for the treatment of ulcers.
- The use of the *hoodia* cactus by Kung Bushmen in Africa to stave off hunger.
- The use of turmeric as a household remedy.
- The use of *ayahuasca* in the Amazon basin for sacred religious and healing purposes. The use of *j’oublie* in Cameroon and Gabon as a sweetener.⁵

2.2 SUBJECT MATTER OF TRADITIONAL KNOWLEDGE

The content of TK⁶ is described in various forums in different ways, depending on the importance attached to some of its aspects. Among various efforts to define TK, for example, the WIPO FFM⁷ report provides that TK is a subset of heritage, comprising of:

“Tradition-based literary, artistic or scientific works; performances; inventions; scientific discoveries; designs; marks; names and symbols;

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5. S.A. Hansen and Justin W. van Fleet, “Issues and Options for Traditional Knowledge Holders in Protecting Their Intellectual Property”, in *Intellectual Property Management in Health and Agricultural Innovation: A Handbook of Best Practices* (eds. A Krattiger, RT Mahoney, L Nelsen, et al.). MIHR: Oxford, U.K., and PIPRA: Davis, U.S.A. Available at www.ipHandbook.org. (Accessed on 16-06-15).
 6. TK refers to Traditional Knowledge.
 7. WIPO FFM refers to WIPO Fact-finding Missions. WIPO began this work with a fact-finding mission in 1999. Considering the issues involved with biodiversity and the broader issues in TRIPs (involving all forms of cultural expressions, not just those associated with biodiversity - including traditional designs, music, songs, stories, etc.), WIPO established the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (IGC-GRTKF).

undisclosed information; and, all other tradition-based innovations and creations resulting from intellectual activity in the industrial, scientific, literary or artistic fields.”⁸

This description expresses TK in terms of Intellectual Property by characterizing it as a subset of “innovations and creations resulting from intellectual activity. By defining ‘tradition based’ as “knowledge systems ... that have generally been transmitted from generation to generation and are generally regarded as pertaining to a particular people or its territory,” the FFM report suggests that TK should necessarily be transmitted through generations, and that it pertaining to a particular people or territory.”⁹

In addition, WIPO defines TK as “ideas developed by traditional communities and indigenous peoples, in a traditional and informal way, as a response to the needs imposed by their physical and cultural environments.”¹⁰ It states: “Those ideas contrast with the respective expressions, such as folk tales, poetry, and riddles, folk songs and instrumental music, dances, plays, etc.”¹¹ This definition acknowledges the traditional dichotomy between technical content of ideas covered under “industrial property” protection, and expressions of ideas which have invariably been addressed from a copyright perspective.¹²

8. From the book published by WIPO, “Intellectual Property Needs and Expectations of Traditional Knowledge Holders: WIPO Report on Fact-finding Missions on Intellectual Property and Traditional Knowledge” in 2001.

Available at <https://books.google.co.in/books?isbn=9280509683> (Accessed on 16-06-15)

9. *Id.*

10. *Id.*

11. WIPO, Consolidated Survey of Intellectual Property Protection of Traditional Knowledge, Traditional Knowledge and Folklore (Delivered to the Intergovernmental Committee on Intellectual Property and Genetic Resources, Geneva, July 7-15, 2003). The entire survey report is available at official website of WIPO i.e. www.wipo.int (Accessed on 12-06-12)

12. Industrial property protection refers to IP protection other than copyrights; for example, patents, trademarks and industrial designs. WIPO International Bureau, The Protection of Traditional Knowledge, Including Expressions of Folklore (WIPO International Forum on

WIPO's definition is significant for a number of reasons. First, TK is identified in relation to "traditional communities and indigenous peoples." This identification relates to "authorship, rather than ownership."¹³ Thus, the definition allows the recognition of individuals, as long as this recognition is based on "customary laws and principles applicable to particular situations."¹⁴ Second, the WIPO definition affirms that an "idea" is categorized as TK if it is created in a traditional and informal way.

The requirement of "traditionality" indicates the method of making TK; it should be developed through "the rules, protocols and customs of a certain community."¹⁵ This allows for the recognition of orally transmitted, or documented / codified TK (for example, through contemporary efforts of documenting TK to protect its misappropriation and misuse).¹⁶

Similar to WIPO, the CBD¹⁷ Secretariat describes TK as:

"The knowledge, innovations and practices of ILCs¹⁸ around the world, Developed from experience gained over the centuries and adapted to the local culture and environment, Traditional Knowledge is transmitted orally from generation to generation. It

"Intellectual Property and Traditional Knowledge: Our Identity, Our Future, Muscat, January 21 and 22, 2002) WIPO/IPTK/MCT/02/INF.4, para. 15.

13. Nuno Pires de Carvalho, "From the Shaman's Hut to the Patent Office: A Road Under Construction" in Mcmanis and Charles R, "Biodiversity and the Law", London : Earthscan, 2007.

14. *Id.*

15. *Id.*, 244.

16. Vinod Gupta, "India's TKDL: Definition and Classification of Intangible Cultural Heritage and Traditional Knowledge in the Context of Inventory Making," in Toshiyuki Kono, ed, Intangible Cultural Heritage and Intellectual Property: Communities, Cultural Diversity and Sustainable Development (Antwerp: Intersentia, 2009).

17. CBD refers to Convention on Biological Diversity. The Convention was opened for signature at the Earth Summit in Rio de Janeiro on 5 June 1992 and entered into force on 29 December 1993. The Convention has three main goals: conservation of biological diversity, sustainable use of its components and fair and equitable sharing of benefits arising from genetic resources.

18. ILC refers to Indigenous Local Communities.

tends to take the form of stories, songs, folklore, proverbs, cultural values, beliefs, rituals, community laws, local language, and agricultural practices.”¹⁹

This definition mainly reflects the position of CBD on TK in relation to global environmental concerns. Accordingly, it emphasizes TK as a foundation of “a living, dynamic body of traditions and practices” that is derived from intimate interaction with “local culture and environment.” This is consistent with the CBD’s understanding of the utility of TK to biodiversity conservation as can be evinced from its reference to TK as “knowledge, innovations, and practices, relevant for the conservation and sustainable use of biological diversity.”²⁰ Biber-Klemm²¹ rightly points out that this definition implies, first, that the CBD is concerned with TK in relation to biological resources; second, that the protection should be limited to knowledge, innovations and practices which first originate in ILCs embodying traditional lifestyles and which are relevant for the conservation and sustainable use of biological diversity.²²

WIPO’s definition provides a relatively wider context for the subject matter of TK in its technical content as well as its various expressions. For this reason, the thesis adopts WIPO’s definition in the analysis of legal mechanisms to protect TK.

19. CBD Secretariat, Article 8(j): Traditional Knowledge, Innovations and Practices, available at <http://www.cbd.int/traditional/intro.shtml> (Accessed on 11-12-13).

20. CBD, Art. 8 (j).

21. Dr Susette Biber-Klemm is a senior research fellow at the WTI (World Trade Institute), University of Bern Hallerstrasse 6, 3012 Bern, Switzerland.

22. From answers to the questions posed to the Expert Group on TK associated with GR as specified in COP decision IX/12 in meeting of the Expert Group on Traditional Knowledge associated with genetic resources, held in Hyderabad, India, from 16 to 19 June 2009, available at <https://www.cbd.int/abs/submissions/absgtle-03-natural-justice-en.pdf> (Accessed on 10-11-12).

Legal and policy efforts related to TK put emphasis on the characterization of various elements of TK, in order to minimize the difficulty of providing a concise definition that delineates exact features and parameters. An unrealistic expectation for settled understanding of the concept may, in itself, limit the potential for consensus on the main agenda of protecting TK. For this reason, full recognition of major features that distinguish TK from other knowledge systems is necessary in legal and policy discussion for a protective regime of TK.²³ The following Section after discussion of holders of TK, gives a brief overview of some features of TK.

2.3 IDENTIFICATION OF THE KNOWLEDGE HOLDERS: INDIGENOUS PEOPLES AND LOCAL COMMUNITIES

The task of defining the term “indigenous peoples” has evoked considerable discussion, but without a clear definition. Whether efforts to protect TK should determine what constitutes TK based on the identity of the community that holds the knowledge depends, largely, on what distinguishes people as “indigenous.” Daes, points out that “the concept of ‘indigenous’ is not capable of a precise, inclusive definition that can be applied in the same manner to all regions of the world.”²⁴

The concept of “indigenous peoples” has its origin in the experience of colonialism, whereby “the aboriginal peoples of a given land were

23. Indigenous peoples and local communities engage in the creation, preservation and transfer of knowledge in a continual manner as a means of survival and group identity, and not for the sake of financial gain. In real-life terms, there are other incentives that encourage creativity and inventiveness, including honor and recognition as evidenced and rewarded through publication, citation, academic tenure, prizes for academic achievement or demonstrations of skill in public competitions, and awards of government grants for research. Gupta Anil K., “Accessing Biological Diversity and Associative Knowledge Systems: Can Ethics Influence Equity?” cited in David R. Downes, “How Intellectual Property Could Be a Tool to Protect Traditional Knowledge” (2000) 25 Colum J Envtl L 253 at 260.

24. Working Group on Indigenous Populations, Working Paper by the Chairperson-Rapporteur on the Concept of Indigenous Peoples, U.N. Doc. E/CN.4Sub.2/AC.4/1996/2 (1996).

marginalized after being invaded by colonial powers, whose peoples are now dominant over the earlier occupants.”²⁵ Based on this understanding, the ILO Convention defines indigenous peoples as those who have:

Descent from the populations which inhabited a country, or a geographical region to which the country belongs, at the time of conquest or colonization or the establishment of present state boundaries and who, irrespective of their legal status, retain some or all of their own social, economic, cultural and political institutions.²⁶

Mugabe²⁷ notes that this definition lays down four “vital factors of time, geographical space, resilience, and territorial occupation” in the determination of who “indigenous peoples” are.²⁸ The “time” and “geography” factors in the definition of indigeneity warrant particular attention, as these are key dimensions that determine the scope and category of people to be recognized as “indigenous peoples.”

The time-based dimension of ILO’s definition relates to its requirement that people who qualify for recognition as “indigenous peoples” should retain “social, economic, cultural, and political institutions” that were present at “the time of conquest, colonization...”²⁹ This is problematic, as the requirement of “retention” overly restricts the group of people to regard as “indigenous.” The requirement effectively excludes “indigenous peoples and persons whose

25. Secretariat of the Permanent Forum on Indigenous Issues, *State of the World’s Indigenous Peoples* (New York: United Nations, 2009) at 6.

26. International Labour Organization Convention No.169 Concerning Indigenous and Tribal Peoples in Independent Countries, 7 June 1989, reprinted in (1989) 28 I.L.M.1382.

27. Dr. John Mugabe, Executive Director, African Center for Technology Studies, Nairobi, Kenya.

28. John Mugabe, “Intellectual Property Protection and Traditional Knowledge: An Exploration in International Policy Discourse” Available at <http://www.wipo.int/tk/en/hr/paneldiscussion/papers/pdf/mugabe.pdf> (Accessed on 23-09-12).

29. From the Final Report of MOST International UNESCO Workshop on “Measuring Social Public Policies: Inclusiveness and Impact”, 25-26 March 2013 Paris. Available at http://unesdoc.unesco.org/images/0022/0022_14/221407e.pdf (Accessed on 16-06-15).

institutional bearing and identity were disrupted by colonialism and conquest.”³⁰ The geographical limitation of the ILO definition, concerning the reference to “descent from the populations which inhabited a country, or a geographical region to which the country belongs,” directly points to “the Americas,³¹ Russia, the Arctic, and many parts of the Pacific.” This requirement, however, does not make sense in relation to other parts of the world, in particular, most parts of Asia and Africa where settlers of European descent did not displace the whole population during colonialism. In many parts of Africa and Asia, issues of indigenous peoples’ rights arise in relation to the suppression of marginalized groups by dominant groups, and not only by outside settlers as the ILO definition presupposes.³²

Thus, to separate Africans and Asians into indigenous and non-indigenous peoples based on those standards, and to recognize the rights of indigenous peoples based on such division, creates “separate classes of citizens ... with different rights.”³³ Due to objections raised on these grounds, the 2007 Declaration on the Rights of Indigenous Peoples failed to endorse ILO’s definition of “indigenous peoples” that was earlier included in the earlier draft of the document.³⁴

30. Oguamanam, “International Law”, Chapter 1 at 21. Available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2298814 (Accessed on 16-06-15).

31. *Id.*

32. *Id.*

33. *Id.* (For the same reason, the discussion in this chapter occasionally uses the terms “ILCs” and “developing countries” interchangeably. This is justified on the argument that “indigeneity” and “local” apply to the majority peoples in African and Asian countries. This also presumes that national governments in these countries represent their constituents under the rationale of political representation.).

34. Robert T. Coulter, “Commentary on the UN Draft Declaration on the Rights of Indigenous Peoples” (1994) 18 *Cult Surv Q* 37 at 38; see also General Assembly Adopts Declaration on Rights of Indigenous Peoples, 13 September 2007 online: <<http://www.un.org/News/Press/docs/2007/ga10612.doc.htm>>; Declaration on the Rights of Indigenous Peoples, GA Res. A/61/295, 107th Plen. Mtg., (2007).

Indeed, any formal definition of “indigenous peoples” brings the danger of excluding certain groups, and thus, legal and policy initiatives tend to leave the term open-ended and as widely applicable as possible. The universal view is that no such definition is *sine qua non* for the recognition and protection of indigenous peoples’ rights, and, that communities should be entitled to determine their own identity.³⁵ The approach that allows “self-identification” agrees with the perspective of most indigenous peoples who reject the idea of a formal definition of “indigenous peoples” at the international level. Indeed, indigenous peoples assert the right to self-definition as an element of self-determination.³⁶ For this reason, policy deliberations and legal analyses of the topic at the international level are mostly geared towards setting wide criteria that accommodate the right of indigenous peoples themselves to define what and who is indigenous.³⁷

35. Secretariat of the United Nations Permanent Forum on Indigenous Issues, Resource Kit on Indigenous Peoples’ Issues (New York: United Nations, 2008) at 7. An elaborated and universal definition of indigenous peoples is currently considered neither desirable nor necessary, as it may restrictively “exclude some groups” and consequently, may leave these groups “outside the *ratione personae* of specific indigenous rights norms” provided by international law. See, Peter-Tobias Stoll & Anja von Hahn, “Indigenous Peoples, Indigenous Knowledge and Indigenous Resources in International Law” in Silke von Lewinski, ed, *Indigenous Heritage and Intellectual Property, Genetic Resources* (The Hague: Kluwer Law Int., 2008) at 11.

36. In consideration of the problematic approach of ILO’s definition, the Report of the Working Group of Experts on Indigenous Populations/Communities of the African Commission on Human and Peoples’ Rights emphasizes that the concept of indigenous must be understood in wider context: The focus should be on more recent approaches focusing on self-definition as indigenous and distinctly different from other groups within a state; on a special attachment to and use of their traditional land whereby ancestral land and territory has a fundamental importance for their collective physical and cultural survival as peoples; on an experience of subjugation, marginalization, dispossession, exclusion or discrimination because these peoples have different cultures, ways of life or modes of production than the national hegemonic and dominant model.

See African Commission on Human and Peoples’ Rights & International Work Group For Indigenous Affairs, Report of the African Commission’s Working Group of Experts on Indigenous Populations/ communities (Copenhagen: Skolens Trykkeri, 2005) at 92; also see Elsa Stamatopoulou, “Indigenous Peoples and the United Nations: Human Rights as a Developing Dynamic” (1994) 16 Human Rights Quarterly 58-81.

37. Erica-Irene A. Daes, Working Paper on the Concept of “Indigenous People” (Prepared for the Working Group on Indigenous Populations, 1996) UN Doc E/CN.4/Sub.2/AC.4/1996/2;

However, even the widest possible understanding of “indigenous peoples” may exclude certain communities who engage in the creation and maintenance of TK from the category of “indigenous peoples.” The term “indigenous knowledge” may refer to the knowledge that belongs to “indigenous peoples” understood in the manner described above, rather than to local, popular, or informal knowledge in general. For this reason, WIPO realizes that “indigenous knowledge” is not necessarily TK.³⁸

The literature and international instruments usually refer to the categories of people that may not fit the criteria for indigenesness as “local communities.”³⁹ The term “communities embodying traditional lifestyles” in the CBD is, for example, understood to refer to “both farming communities and indigenous peoples.”⁴⁰ The CBD prefers the term “indigenous peoples and local communities” instead of just “indigenous peoples,” on the ground that the former ensures that communities who maintain traditional lifestyle are included even if they are not considered indigenous – “especially considered to be the case in Africa.”⁴¹ Non-indigenous communities constitute the majority and are holders of indigenous knowledge in many developing countries.⁴²

José Martínez Cobo, “Study of the Problem of Discrimination against Indigenous Populations”, 1986/7, UN Doc E/CN.4/ Sub.2/1986/7, para 379.

38. WIPO, “Intellectual Property, Traditional Knowledge and Genetic Resources Policy Options for Developing Countries” (Presented at International Conference on Intellectual Property, the Internet, Electronic Commerce And Traditional Knowledge, Sofia, May 29 to 31, 2001) at 5.

39. For discussion on the distinction between the terminologies “local communities,” and “indigenous people,” see Marcus Orellana, REDD Legal Issues: ILCs (Center for International Environmental Law Draft Report, 30 March 2009).

40. Susette Biber-Klemm & Thomas Cottier, eds, *Rights to Plant Genetic Resources and Traditional Knowledge: Basic Issues and Perspectives* (Wallingford: CABI, 2006) at 16.

41. *Id.*

42. Christoph Antons, “Traditional Knowledge and Intellectual Property Rights in Australia and Southeast Asia” in C. Heath & A.K. Sanders, eds, *New Frontiers of Intellectual Property Law: IP and Cultural Heritage, Geographical Indications, Enforcement, Overprotection* (Oxford: Hart Publishing, 2005) at 37.

Seemingly for this reason, the Rio Declaration also refers to the notion of “indigenous peoples and local communities” instead of just “indigenous peoples.”⁴³ In a similar manner, the CBD refers to “Traditional Knowledge, innovations and practices of ILCs,”⁴⁴ whereas the International Treaty on Plant Genetic Resources for Food and Agriculture mentions the “enormous contribution that the local and indigenous communities and farmers of all regions in the world (have made) for the conservation and development of plant genetic resources.”⁴⁵

As Biber-Klemm, et al⁴⁶, observes, however, the difference between “indigenous peoples” and “local communities” is, “in any case...rather fluid.”⁴⁷ The term “local community” is defined as “a human population in a distinct geographical area, with ownership over its biological resources, innovations, practices, knowledge, and technologies governed partially or completely by its own customs, traditions, or laws.”⁴⁸ Consistent with this definition, “local communities” may be understood as “farming communities in subsistence farming systems, which do not correspond to the definition of ‘indigenous’” as described above, or those who “do not wish to use (the indigenous) line of argument to their end.”⁴⁹

While previous efforts have illuminated the discussion on the knowledge of indigenous peoples in terms of the rights of minorities over

43. Rio Declaration on Environment and Development, June 1992, 32 I.L.M. (1992) 874, preamble, para. 12 [“Rio Declaration”].

44. CBD, Art. 8 (j)

45. International Treaty on Plant Genetic Resources for Food and Agriculture, Opened for Signature on Nov. 3, 2001, FAO Res. 3/2003, online: FAO < <ftp://ftp.fao.org/ag/cgrfa/it/itpgre.pdf> > at Art. 9.1[ITPGRFA].

46. Others are- Thomas Cottier, Philippe Cullet & Danuta Szymura.

47. Art. 9.1, International Treaty on Plant Genetic Resources for Food and Agriculture.

48. Ndahinda, Felix Mukwiza, “Indigeness in Africa”, Springer Science & Business Media, 2011 Available at <https://books.google.co.in> (Accessed on 16-06-15).

49. OAU, African Model Legislation for the Protection of the Rights of Local Communities, Farmers and Breeders, and for the Regulation of Access to Biological Resources, Algeria (2000) at Part II, Art. 1

their resources, the discussion regarding the knowledge of local farming communities has been less intense.⁵⁰ The rights of local communities are mostly conducted “rather in the context of the participatory rights as enshrined in the Farmers’ Rights” under the provisions of the International Treaty on Plant Genetic Resources for Food and Agriculture.⁵¹ The interest of local farming communities is “less noticeable” in international debates, for they “seem to be much less organized and politically involved than the indigenous peoples.”⁵²

In spite of the different contexts in which the interests of “local communities” and “indigenous peoples” surface in international forums, knowledge held by “local communities” coincides with the knowledge system of “indigenous peoples” in the narrower context of agricultural knowledge. Biber-Klemm, et al, summarise key common features of the knowledge of “indigenous peoples” and of “local communities” as follows:

“In both types of knowledge, the information is frequently not perceived as the creation of individuals, but is understood as the achievement of a specific community, having evolved – and continuing to evolve – in cumulative steps over many generations. It is managed and exchanged according to the customs and customary laws of the community. A close interaction exists between TK of any one kind and the surrounding ecosystem. TK plays a key role in the preservation

50. Andrea Muehlebach, “‘Making Place’ at the United Nations: Indigenous Cultural Politics at the U. N. Working Group on Indigenous Populations” (2001), *Cultural Anthropology*, p.415-448

51. *Id.*, 18

52. Susette Biber-Klemm, “The Protection of Traditional Knowledge on the International Level – Reflections in Connection with World Trade” (UNCTAD Expert Meeting on Systems and National Experiences for Protecting Traditional Knowledge, Innovations and Practices, Geneva, 2000), p.3

and sustainable use of the diversity of wild and domesticated plant varieties and animal species. In turn, it depends on the surrounding environment in which it has been created. It is a crosscutting issue that is embedded in the culture of a people. Thus its existence is dependent on, and determined by, the maintenance of this culture from one generation to the next.”⁵³

Given the common grounds between the knowledge systems of “indigenous peoples” and “local communities,” therefore, their protection and recognition should be integrated, complementary, and mutually supportive. Consonant with the use of the concept in the thesis, the term “Traditional Knowledge” includes the knowledge of both indigenous and non-indigenous communities such as farming communities who, as required by the CBD, rely on “traditional systems” of production.

2.4 UNDERSTANDING TRADITIONAL KNOWLEDGE BY COMPARING WESTERN WAYS OF LIFE AND FIRST NATIONS WAYS OF LIFE

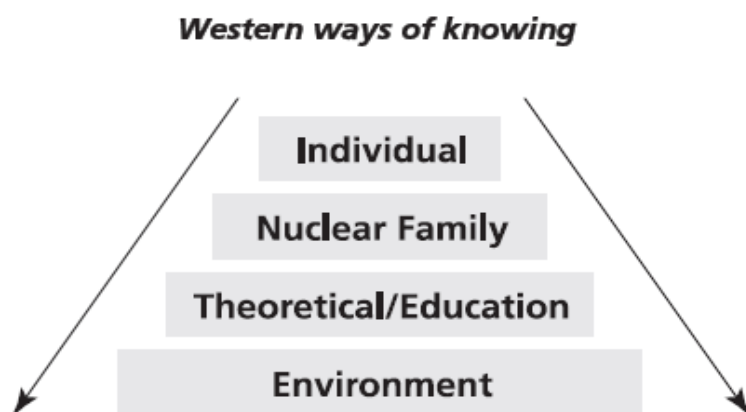
2.4.1 WESTERN WAYS OF LIFE

Western countries mostly contain individualistic approach of society. Joint families are rare to find there, they live in nuclear families. Therefore, they lack the lived experience as opposed to First Nations where children learn from their surroundings and environment. Western ways of knowing are rooted in academics, science, and literature. They lack the experience based knowledge that First Nations peoples emphasize.⁵⁴ Quantitative evidence and numbers are important to western thought, which often sees things in

53. Susette Biber-Klemm, Thomas Cottier, “Rights to Plant Genetic Resources and Traditional Knowledge: Basic Issues and Perspectives”, Wallingford: CABI, 2006 Available at <https://books.google.co.in/books?isbn=0851990339> (Accessed on 16-06-15).

54. www.fnhc.ca/index.php/initiatives/community_health/traditional_medicine/-33k (Accessed on 13-03-11).

absolutes, or what can be seen and scientifically proven. This is clear when looking at the western medical model.⁵⁵ Illness is seen as coming from the body and its parts. People; their surroundings (environment); and relationships with others, nature and the spirit world are not often considered.⁵⁶



2.4.2 FIRST NATIONS WAYS OF LIFE

Some First Nations peoples follow the medicine wheel. It includes physical, emotional, intellectual, and spiritual aspects. Each of these areas is connected to Mother Earth. It also focuses on balance. When one area is not working as well as it should, the other three areas are also affected. First Nations knowledge stems from the Elders understanding of needs and using the Earths gifts for these needs.⁵⁷ Uniquely, First Nations cultures are based on beliefs about the Earth, animals and plants from time immemorial. This knowledge maintains who we are and what is passed on to future generations. This is termed as Traditional Knowledge. Lived experience is central to First Nations knowledge. It is part of how we make sense of, and share information. Storytelling is also a vital part of keeping our cultures alive.

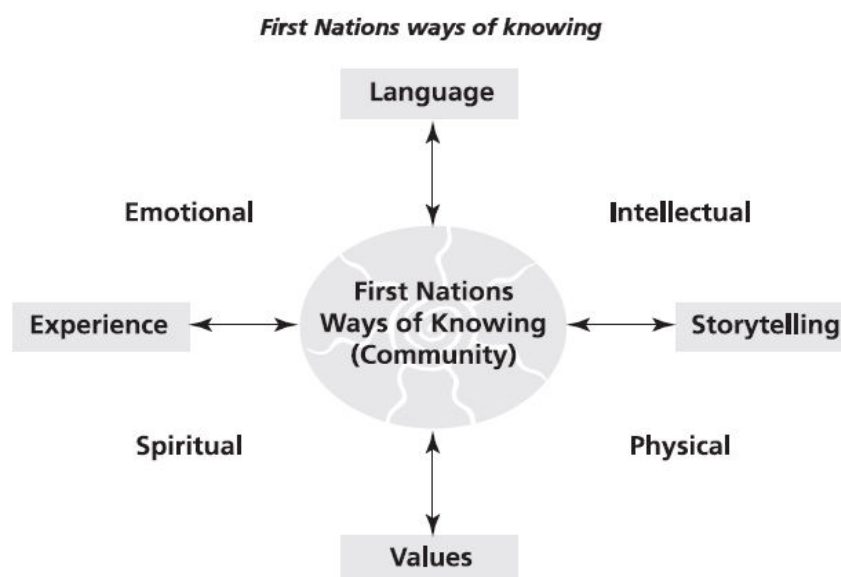
55. www.naho.ca/firstnations/english/documents/FNC-TraditionalKnowledgeToolkit-Eng.pdf, (Accessed on 13-03-11).

56. www.naho.ca/firstnations/english/documents/FNC-TraditionalKnowledgeToolkit-Eng.pdf, (accessed on 13-03-11).

57. www.nativescience.org/html/traditional_and_scientific.html. (Accessed on 24-03-11).

Teaching was done through stories passed on by Elders when there were no writing tools such as paper, pen, and pencil. Language is also a very important part of maintaining Traditional Knowledge. With more technology, language has had to adapt to changes by making words for new objects. In many First Nations languages there are words that do not easily translate to another language. Meanings are learned and passed on through ceremonies, cultures, and crafts.

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2.4.3 COMPARISONS BETWEEN TRADITIONAL AND SCIENTIFIC KNOWLEDGE STYLES

Unlike the western custom of disseminating knowledge through publication, Traditional Knowledge systems exist principally in the form of songs, proverbs, stories, folklore, community laws, common or collective property and inventions, practices and rituals. The knowledge is transmitted through specific cultural mechanisms such as those just listed, and often

58. www.naho.ca/firstnations/english/documents/FNC-TraditionalKnowledgeToolkit-Eng.pdf, (Accessed on 23-03-11).

through designated community knowledge holders, such as elders. The knowledge is considered collective to the community, not private to one individual or small group. Often, indigenous Traditional Knowledge systems contain a rich understanding of plant, crop and tree species, medicines, animal breeds, and local ecological and biological resources. They may also include useful technologies and adaptations to local environments. Traditional Knowledge is not static, nor trapped in amber; it is often in current use. Sophisticated and adaptive, it evolves and responds to changes in the physical and social environment. Both knowledge styles are compared below⁵⁹:

TRADITIONAL KNOWLEDGE	SCIENTIFIC KNOWLEDGE
Transfer of knowledge takes a long time	Transfer of knowledge is fast
Long-term wisdom	Short-term prediction
Powerful prediction in local areas	Powerful predictability in natural Principles
Weak in distant areas of knowledge	Weak in local areas of knowledge
Models based on cycles	Linear modeling as first approximation
Explanations based on examples, stories, myths	Explanations based on hypothesis, theories, laws
• Classification: • a mix of ecological and use • non-hierarchical differentiation • includes everything natural and Supernatural	• Classification: • based on phylogenic relationships • hierarchical differentiation • excludes the supernatural

59. www.nativescience.org/html/traditional_and_scientific.html .(Accessed on 13-03-11)

And the main visible differences between Traditional Knowledge and scientific knowledge are as follows:

TRADITIONAL KNOWLEDGE	SCIENTIFIC KNOWLEDGE
Assumed to be the truth	Assumed to be a best approximation
Sacred and interconnected	Secular (non-religious) segregated
Teaching through storytelling	Formal teaching
Learning by doing and experiencing	Learning by formal education (molding)
Oral and visual	Written
Integrated, based on whole system	Analytical, based on parts of the whole
Intuitive	Model or theory based
Holistic (based on complete systems)	Reductionist (reduces complex systems to simpler systems)
Subjective (based on personal experience/beliefs)	Objective (not based on personal opinion)
Experiential (based on experience)	Positivist (based on facts)

2.5 DEFINITION OF TRADITIONAL KNOWLEDGE

There is no specific definition for the word ‘Traditional Knowledge’. But many debates and discussions have taken place on various platforms to explain the meaning of Traditional Knowledge. It is systematic information that remains in the information sector, normally they are in unwritten and preserved in oral tradition rather than in the form of documents. Traditional Knowledge is not confined to any specific field. It covers medicines, health care, biodiversity, conservation, environment, foundry and agriculture etc. Sometimes it also covers music, dance, textiles, plastic, arts and crafts etc. Therefore, Traditional Knowledge reflects the aesthetics, beliefs, history, ethics and traditions of a particular group of people. The basic feature of the

Traditional Knowledge is that, it is not created or produced systematically. But it is created or produced collectively or individually in relation to one's cultural and traditional environment. Besides, Traditional Knowledge represents cultural values of a particular group.

Traditional Knowledge (TK) is the information that people in a given community, based on experience and adaptation to a local culture and environment, have developed over time, and continues to develop.⁶⁰ This knowledge is used to sustain the community and its culture and to maintain the genetic resources necessary for the continued survival of the community.⁶¹ Traditional Knowledge includes mental inventories of local biological resources, animal breeds, and local plant, crop and tree species. It may include such information as trees and plants that grow well together, and indicator plants, such as plants that show the soil salinity or that are known to flower at the beginning of the rains.⁶² It includes practices and technologies, such as seed treatment and storage methods and tools used for planting and harvesting.⁶³ Traditional Knowledge also encompasses belief systems that play a fundamental role in a people's livelihood, maintaining their health, and protecting and replenishing the environment. TK is dynamic in nature and may include experimentation in the integration of new plant or tree species into existing farming systems or a traditional healer's tests of new plant medicines.⁶⁴

Since Traditional Knowledge has diverse areas, therefore, it is very difficult to define it in an exhaustive manner. To understand the difficulty in defining it, an illustration would be suitable to cite here. We all have multiple

60. www.expresspharmaonline.com/20081015/management02.shtml, (accessed on 13-03-11).

61. <http://shr.aaas.org/tek/handbook.pdf>, (Accessed on 13-03-11).

62. *Id.*

63. *Id.*

64. *Id.*

identities. For example, at various times, a woman may be a mother, sister, daughter, student, teacher, and coach. At other times, that same woman may simply be a person or human being. There are many different ways of defining that one individual by keeping different criteria such as location (Rajasthani, Punjabi, Gujrati etc.), profession (Doctor, Lawyer, Banker etc.), caste/ sir name (Sharma, Verma, Singh etc.). For better understanding, if that woman comes from Circumpolar Canada, she may at one time have been ill-named “Eskimo.” She may see herself as Inuit, and she may also see herself as Nunavummiut, depending on where she lives. How she names herself in her own language may or not be the same as how outsiders identify her. The reasons for holding any one definition may be her own or the reasons may be held by someone else for a particular purpose.

The case is same when we try to define what the Traditional Knowledge is? There are varieties of definitions arising from slightly different perspectives or purposes. These definitions are embraced by commonalities. But it is important to define Traditional Knowledge in order to distinguish it from other kinds of knowledge. Traditional Knowledge reflects belief systems and ways of life that are distinct from modern, industrial belief systems and ways of life. Defining Traditional Knowledge becomes particularly important when the people with whom it originates are trying to preserve and renew their cultural identity.

The following definitions are attempts to gather within their meaning all that indigenous peoples know. It reflects debate among academics, some institutional decision-makers, environmental resource managers, and policy makers. Such terms include *Traditional Knowledge*, *traditional ecological knowledge*, *traditional environmental knowledge*, and *indigenous knowledge*. Some attempts to these are as follows:

1. The Traditional Knowledge Working Group of the Government of the Northwest Territories in Canada was one of the first government policy makers to attempt to define the knowledge of Indigenous peoples, and they came up with this definition of Traditional Knowledge:

“Traditional Knowledge is knowledge that derives from, or is rooted in the traditional way of life of aboriginal people. Traditional Knowledge is the accumulated knowledge and understanding of the human place in relation to the Universe. This encompasses spiritual relationships, relationships with the natural environment and the use of natural resources, relationships between people, and is reflected in language, social organization, values, institutions and laws.”

2. Stephen Brush⁶⁵ has defined indigenous knowledge as “the systematic information that remains in the informal sector, usually unwritten and preserved in oral tradition rather than texts...It is culture specific, whereas formal knowledge is de-cultured.”⁶⁶

One may well ask whether Brush’s definition of indigenous knowledge and his distinction between such knowledge and that which he terms “formal knowledge” stands repeated empirical testing. *Firstly*, he reduces (perhaps unconsciously) knowledge to information and as such misplaces the “practical or skills aspect” of indigenous knowledge holders: one who possesses knowledge usually has skill and experience in the particular problem domain but one may possess information without experience and skill. Knowledge (whether indigenous or non-indigenous) is associated with practical experience and skill in solving a particular problem while holding

65. Distinguished University Professor of the History of Science, Institute for Physical Science & Technology and Department of History, University of Maryland. (From official website of the University i.e. ucdavis.edu/people/sbbrush) (Accessed on 16-06-15).

66. Greaves, “Tribal Rights” in Brush and Stabinsky (Eds.) *Valuing Local Knowledge: Indigenous Peoples and Intellectual Property Rights* (Island Press, Covelo, 1996). p-4

information (for example, about indigenous activities) does not necessarily endow one with skill and experience in solving a problem. As Greaves asserts: “indigenous knowledge is, in the main, something more than matter-of-fact information. Rather, it is usually invested with a sacred quality and systemic unity, supplying the foundation on which members of a traditional culture sense their *communitas*, personal identity, and ancestral anchorage.”⁶⁷

Secondly, Brush’s classification of knowledge into indigenous and formal fails not only because there is striking similarities across the two classes, but also for the reason that indigenous information could be formalized. It could be codified in ethno-botanical databanks and packaged for use in the formal sector, for example by modern pharmaceutical industries. TKDL in India is the good example of codifying it.

3. The International Labor Organization (ILO) Convention⁶⁸ concerning Indigenous and Tribal Peoples in Independent Countries defines indigenous peoples as:

“Peoples in independent countries who are regarded as indigenous on account of their descent from populations which inhabited the country, or a geographical region to which the country belongs, at the time of conquest or colonization or the establishment of present state boundaries and who irrespective of their legal status, retain some or all of their own social, economic, cultural and political institutions.”⁶⁹

The ILO Convention definition carries four vital factors of time, geographical space, resilience, and territorial occupation by outside

67. Id, 26

68. Indigenous and Tribal Peoples Convention, 1989 (Adapted on June 27, 1989).

69. Article 1, International Labor Organization Convention Concerning Indigenous and Tribal Peoples in Independent Countries, June 1989 (referred to as Convention 169).

populations to be considered in any discussion of indigenous peoples and knowledge.

4. Traditional ecological knowledge, according to Environmental Information Partnership, based in Ontario, Canada, is “environmental knowledge that has been gathered by aboriginal peoples who have lived in and observed a particular area for generations, and has been handed down by statements, beliefs, legends, customs, from generation to generation by word of mouth or by practice, based on facts, truths, or principles.”⁷⁰

5. According to Huntington⁷¹, traditional ecological knowledge is “systems of experiential knowledge gained by continual observation and transmitted among members of a community. It is set in a framework that encompasses both ecology and the interactions of humans and their environment on physical and spiritual planes.”

6. According to Dr. Fikret Berkes⁷² “TEK is a cumulative body of knowledge and beliefs, handed down through generations by cultural transmission, about the relationship of living beings (including humans) with one another and with their environment. Further, TEK is an attribute of societies with historical continuity in resource use practices; by and large, these are non-industrial or less technologically advanced societies, many of them indigenous or tribal.”

70. Module 4 of Traditional Knowledge, Developed by Gord Bruyere, independent Indigenous scholar, Canada, and Einar Bergland, Norway, University of the Arctic. Available at old.uarctic.org/Module_4_4fU4I.pdf.file (Accessed on 16-06-15).

71. Samuel Phillips Huntington (April 18, 1927 – December 24, 2008) was an influential conservative political scientist from the United States of America whose works covered multiple sub-fields of political science. He gained wider prominence through his *Clash of Civilizations* (1993, 1996) thesis of a post-Cold War new world order..

72. Distinguished Professor and Canada Research Chair Natural Resources Institute University of Manitoba Winnipeg, Manitoba .

7. The Dene Cultural Institute developed a definition of traditional environmental knowledge as being far broader than knowledge that merely pertains to the environment⁷³:

Traditional Environmental Knowledge is a body of knowledge and beliefs transmitted through oral traditions and first hand observation. It includes a system of classification, a set of empirical observations about the local environment and a system of self management that governs resource use. Ecological aspects are closely tied to social and spiritual aspects of the knowledge system. The quantity and quality of TEK varies among community members, depending upon gender, age, social status, intellectual capability and profession (hunter, spiritual leader, healer, etc.). With roots firmly in the past, TEK is both cumulative and dynamic, building upon the experience of earlier generations and adapting to the new technological and socioeconomic changes of our present.

8. According to Usher: “TEK could be characterized as the knowledge claims of those who have a lifetime of observation and experience of a particular environment and as a result function very effectively in that environment, but who are untutored in the conventional scientific paradigm . . . TEK is not privileged or secret knowledge in the way that certain other cultural phenomena, such as ritual, healing, or spirituality, may sometimes be.”⁷⁴

9. According to International Indigenous Forum on Biodiversity 2003: “Indigenous knowledge is the essence of the identities and world views of

73. www.uarctic.org/Module_4_4fU4I.pdf, (accessed on 22-03-12).

74. Usher 2000: 186-189 Available at http://nafaforestry.org/forest_home/documents/TKdefs-FH-19dec06.pdf (Accessed on 22-12-14).

Indigenous peoples. Traditional Knowledge constitutes the collective heritage and patrimony of Indigenous peoples. Therefore it is priceless to us, and its value cannot be calculated for economic exploitation.”⁷⁵

10. According to Centre for Traditional Knowledge, “Traditional Knowledge involves the practices of the Elders and is based upon customary law. The essence of TK is found in the language of the people. . . . [TK includes, among other elements:] ceremonies, language, teachings, dance & drum, hunting, housing, planting, harvesting, arts and crafts, storytelling, technology, governance, sacred sites, songs.”⁷⁶

11. Convention on Biological Diversity defines Traditional Knowledge as: “Traditional Knowledge refers to the knowledge, innovations and practices of indigenous and local communities around the world. Developed from experience gained over the centuries and adapted to the local culture and environment, Traditional Knowledge is transmitted orally from generation to generation. It tends to be collectively owned and takes the form of stories, songs, folklore, proverbs, cultural values, beliefs, rituals, community laws, local language, and agricultural practices, including the development of plant species and animal breeds. Traditional Knowledge is mainly of a practical nature, particularly in such fields as agriculture, fisheries, health, horticulture, and forestry.”⁷⁷

12. According to Hiebert and Van Rees: “Traditional Knowledge had many definitions but the central theme consisted of cultural beliefs and traditions being passed on from their forefathers to the present generation for the purpose of survival while still living in harmony with the ecosystems.

75. Item 7.

76. From the paper entitled “Customary Law, Traditional Knowledge and Intellectual Property: An Outline of the Issues” published by WIPO Available at <http://www.wipo.int/> (Accessed on 16-06-15).

77. <https://www.cbd.int/traditional/intro.shtml> (Accessed on 16-06-15).

Traditional Knowledge is something that is learned during a lifetime and realizes the interconnectedness of the trees, soil and water.”⁷⁸

13. According to Beverly-Qamaniruaq Caribou Management Board⁷⁹ : “Traditional environmental knowledge (TEK) is generally defined as the body of knowledge built up by a group of people through generations of living in close contact with nature. It includes a system of classification, empirical observations about the local environment, and certain rules and views that affect resource use.”

14. Jameson Brant, a Mohawk working with the Cree and Ojibway of the northern boreal forest in Ontario, describes this knowledge as: “a body of information about the interconnected elements of the natural environment which traditional Indigenous people have been taught, from generation to generation, to respect and give thanks for.”⁸⁰

15. According to FSC, Canada⁸¹: “Traditional Knowledge: Includes, but is not limited to knowledge of:

- Local behaviour, distribution or cycles of fish, wildlife and plant life;
- Broader climatic changes or cycles;
- Local ecosystem or geomorphologic responses to natural or human disturbances;
- Local population densities or changes in fish and wildlife;
- Qualitative information about the utility of a variety of medicinal, edible, or material resource plants;

78. Hiebert, D., and K. Van Rees, submitted draft on “Traditional Knowledge on Forestry Issues within the Prince Albert Grand Council”. The draft is available at <http://www.pamodelforest.sk.ca/pubs/PAMF6100.pdf> (Accessed on 16-06-15).

79. Beverly Qamaniruaq Co-operative Management Board. 1996. Action Plan. Available at <http://arctic-caribou.com/> (Accessed on 16-06-15).

80. Elizabeth Christophe, “Communication across cultures”, 2012, Palgrave Macmillan, U.K., p-351. Available at <https://books.google.co.in> (Accessed on 16-06-15).

81. Forest Stewardship Council Canada Working Group (FSC Canada). 2004. Available at <https://ca.fsc.org> (Accessed on 17-06-15).

- requirements or activities needed to maintain or enhance local ecosystems.”

16. Lorraine Brooke gives the following definition of Indigenous knowledge⁸²:

It includes facts, concepts, theories about the characteristics which describe the objects, events, behaviours and interconnections that comprise both the animate and inanimate environments of Indigenous peoples. The various types of information and concepts that define an individual's knowledge have been developed through that person's observations of, experiences with, and explanations about the physical environment and living resources that characterise the territory in which they live. The content and extent of knowledge varies from individual to individual and there can be a specialisation in expertise. The knowledge is commonly shared between individuals, which encourages an exchange and critique of both facts and ideas at any one point in time; and it is transferred from one generation to the next through the oral tradition thus enabling the knowledge base of Indigenous societies to be transmitted and expanded over time . . . Even though Indigenous knowledge is not quantitative in nature, it does not mean that it is not precise. In fact, the need to be precise is one of the primary identifying elements of this knowledge base.

17. “International IP (Intellectual property) standards typically defer to the national level for determining the precise scope of protected subject matter. The international level can range between a description in general terms of eligible subject matter, a set of criteria for eligible subject matter, or no definition at all. For example, the Paris Convention and the TRIPS Agreement

82. Module 4 of Traditional Knowledge, Developed by Gord Bruyere, independent Indigenous scholar, Canada, and Einar Bergland, Norway, University of the Arctic. Available at old.uarctic.org/Module_4_4fU4I.pdf.file (Accessed on 16-06-15).

do not define ‘invention.’ The Paris Convention defines ‘industrial property’ in broad and expansive terms. This provision takes a comparable approach which recognizes the diverse definitions and scope of TK that already apply in existing national laws on TK, and does not seek to apply one singular and exhaustive definition. Guided by existing national laws, however, this provision clarifies the scope of TK in a descriptive way. Its wording draws on a standard description that has been developed and consistently used by the Committee, which was based in turn on the Committee’s analysis of existing national laws on the protection of TK. In essence, if intangible subject matter is to constitute Traditional Knowledge for the purposes of these provisions, it should be ‘traditional,’ in the sense of being related to traditions passed on from generation to generation, as well as being ‘knowledge’ or a product of intellectual activity.”⁸³

18. According to Indigenous Peoples’ Restoration Network 2006 ⁸⁴ : “Traditional ecological knowledge (TEK) – or sometimes referred to as traditional environmental knowledge – is often described as local and holistic, integrating the physical and spiritual into a worldview or ‘cosmovision’ that has evolved over time and emphasizes the practical application of skills and knowledge. TEK is the product of careful observations and responses to ever changing environmental and socio-economic conditions: as we now know, adaptation is the key to survival.”

19. TEK can also be viewed as a system of self-management, an extremely valuable source of environmental information that allows indigenous or other

83. From the Document prepared by the Secretariat, WIPO on intergovernmental committee on intellectual property and genetic resources, Traditional Knowledge and folklore in Eighth Session, Geneva, June 6 to 10, 2005.

Available at www.niscair.res.in/conclave/downloadables/.../wipo_grtkf_ic_10_5.doc (Accessed on 17-06-15).

84. Indigenous Peoples’ Restoration Network. Traditional ecological knowledge, Available at <http://www.ser.org/iprn/tek.asp> . (Accessed on 23-12-2014).

isolated native communities to protect and preserve their way of life. It is the basis for local decision-making in agriculture, hunting and gathering, nutrition and food preparation, resource management, education and health as well as social, economic, and political organization. This is now recognized as ‘the inextricable link between cultural and biological diversity’.⁸⁵

20. Fikret Berkes⁸⁶ considers four interrelated levels within TEK which he terms the knowledge-practice-belief complex: the first includes knowledge based on empirical observations essential for survival (species taxonomy, distribution, and life cycles); the second focuses on the understanding of ecological processes and natural resource management (practices, tools, and techniques); the third is the socio-economic organization necessary for effective coordination and cooperation (rules and taboos); and the fourth is referred to as the worldview or ‘cosmovision’ (religion, belief, and ethics).⁸⁷

It is important to realize the important role of language in the transmission of TEK, the vehicle by which taxonomic systems, metaphysical perceptions, and codified knowledge are passed from generation to generation. Thus, in order for TEK to survive (and prove itself useful in the modern world) so must the language to which it is intricately linked. Although the TEK community is beginning to recognize ‘the inextricable link between cultural and biological diversity’, linguistic diversity is often not on the agenda of many global forums.”⁸⁸

85. 1988 Declaration of Belém. Available at <http://www.ser.org/iprn/traditional-ecological-knowledge> (Accessed on 17-06-15).

86. Distinguished Professor and Canada Research Chair, Natural Resources Institute University of Manitoba, Winnipeg, Manitoba, Canada.

87. 1988 Declaration of Belém. Available at <http://www.ser.org/iprn/traditional-ecological-knowledge> (Accessed on 17-06-15).

88. www.ser.org/iprn/traditional-ecological-knowledge (accessed on 01-03-12).

21. Traditional Knowledge (TK)⁸⁹: refers to the “content” of know-how that is transmitted through traditional, intergeneration means. TK has a distinctive link with the community that identifies with it, to which local customary law may apply. TK may be considered sacred or culturally sensitive. Examples are such as mental inventories of local biological resources, agricultural, environmental or medical knowledge. These forms of knowledge can also be associated with traditional cultural expressions (TCEs) or expressions of folklore, such as songs, chants, narratives, motifs and designs.

22. According to WIPO, “Traditional Knowledge” comprises: tradition-based literary, artistic or scientific works; performances; inventions; scientific discoveries; designs; marks, names and symbols; undisclosed information; and, all other tradition-based innovations and creations resulting from intellectual activity in the industrial, scientific, literary or artistic fields.⁹⁰ In the above definition, tradition-based refers to knowledge systems, creations, innovations and cultural expressions which: have generally been transmitted from generation to generation; are generally regarded as pertaining to a particular people or its territory; and, are constantly evolving in response to a changing environment.⁹¹ Characteristically, Traditional Knowledge is thus knowledge that: is traditional only to the extent that its creation and use are

89. WIPO Report on Fact-Finding Missions on Intellectual Property and Traditional Knowledge (1998-1999) (Geneva April 2001). Available at [www.itd.or.th/en/node/406 - 48k](http://www.itd.or.th/en/node/406-48k), (Accessed on 22-03-12).

90. One important and widely acknowledged aspect about Traditional Knowledge is that it does not imply static nor necessarily old knowledge. Rather, "Traditional Knowledge" is often dynamic and adaptive to changing culture patterns and wide range of external influences, including occupation of indigenous people's lands, market pressures over certain resources, re-settlement, etc. "Traditional Knowledge" often flows in oral forms and is not codified in writing or in systematized forms (i.e. books or database). For some a key feature in its collective nature: knowledge is generated collectively in complex communal manners where no one individual can be recognized as a "creator" (this is not an issue over which no consensus exists although most people tend to agree on the collective nature of Traditional Knowledge). For further details on terminology see WIPO. Intellectual Needs and Property and "Traditional Knowledge" Holders. WIPO Report on Fact Finding Missions on Intellectual Property and "Traditional Knowledge" (1998-99) Geneva, April, 2001.

91. *Id.*

part of the cultural traditions of a community—“traditional,” therefore, does not necessarily mean that the knowledge is ancient or static; is representative of the cultural values of a people and thus is generally held collectively; is not limited to any specific field of technology or the arts; is “owned” by a community and its use is often restricted to certain members of that community.⁹²

23. Traditional Knowledge⁹³ (TK) (or other co-terminus terms such as indigenous knowledge, and local knowledge) generally refer to the long-standing information, wisdom, traditions and practices of certain indigenous peoples or local communities. In many cases, Traditional Knowledge has been orally passed for generations from person to person. Some forms of Traditional Knowledge are expressed through stories, legends, folklore, rituals, songs, art, and even laws. Other forms of Traditional Knowledge are often expressed through different means. One distinction that is often made between TK and modern or “western” knowledge is that unlike the latter, TK does not separate “secular” or “rational” knowledge from spiritual knowledge, intuitions, and wisdom. It is often embedded in a cosmology, and the distinction between “intangible” knowledge and physical things is often blurred. Indeed, holders of TK often claim that their knowledge cannot be divorced from the natural and cultural context within which it has arisen, including their traditional lands and resources, and their kinship and community relations. It is important to emphasize that TK is not, as often perceived, a static phenomenon, but one that is constantly evolving with changes in the internal and external environment of the community concerned.

92. <http://www.ilo.org/ilolex/cgi-lex/convde.pl?C169> (Accessed on 22-03-11)

93. From the draft report published by the International Institute for Sustainable Development on “Traditional Knowledge and Sustainable Development”, Available at <http://www.iisd.org/>. (Accessed on 22-03-11)

24. First Nations use the term Traditional Knowledge to describe information passed from generation-to-generation. This information may be rooted in⁹⁴:

- Storytelling;
- Ceremonies;
- Traditions;
- Ideologies;
- Medicines;
- Dances;
- Arts and crafts; or
- A combination of all these.

Everyone in a community or culture holds Traditional Knowledge because it is collective. Traditional Knowledge is determined by a First Nation's land, environment, region, culture and language.

25. The World Health Organization (WHO) defines traditional medicine, which forms part of Traditional Knowledge, as follows:

“The sum total of knowledge, skills, and practices based on the theories, beliefs, and experiences indigenous to different cultures, whether explicable or not, used in the maintenance of health as well as in the prevention, diagnosis, improvement of treatment of physical and mental illness.”⁹⁵

Traditional Knowledge is shared through ways of exchanging cultural and traditional information, such as storytelling. People such as elders and healers usually share this knowledge with others in the community.

94. <http://www.who.int>. (Accessed on 22-03-12).

95. www.who.int/medicines/library/trm/trm_strat_eng.pdf. ,(accessed on 15-02-12).

26. Posey⁹⁶ and Dutfield⁹⁷ have summarised a range of categories and embodiments of TK and folklore. It is noteworthy that most of these are related to the environment⁹⁸:

- knowledge of current use, previous use, or potential use of plant and animal species, as well as soils and minerals;
- knowledge of preparation, processing, or storage of useful species;
- knowledge of formulations involving more than one ingredient;
- knowledge of individual species (planting methods, care, selection criteria, etc.);
- knowledge of ecosystem conservation (methods of protecting or preserving a resource that may be found to have commercial value, although not specifically used for that purpose or other practical purposes by the local community or the culture); and
- classification systems of knowledge, such as traditional plant taxonomies.
- renewable biological resources (e.g., plants, animals, and other organisms) that originate (or originated) in indigenous lands and territories;
- cultural landscapes, including sacred sites;
- non-renewable resources (e.g., rocks and minerals);

96. Darrell Addison Posey (March 14, 1947-March 6, 2001) was an American anthropologist and biologist who vitalized the study of Traditional Knowledge of indigenous and folk populations in Brazil and other countries. He called his approach ethnobiology and combined research with respect for other cultures, especially indigenous intellectual property rights.

97. Director of LLM in Intellectual Property Law, The University of Leeds, England

98. <http://www.ictsd.org/unctad-ictsd>, (accessed on 15-02-12).

- handicrafts, works of art, and performances;
- traces of past cultures (e.g., ancient ruins, manufactured objects, human remains);
- images perceived as “exotic”, such as the appearance of indigenous people, their homes and villages, and the landscape; and
- cultural property (i.e., culturally or spiritually significant material culture, such as important cultural artefacts, that may be deemed sacred and, therefore, not commodifiable by the local people).

It is now clear that any complete definition of Traditional Knowledge is not possible which may include all aspects of Traditional Knowledge and may fit in all the contexts. Now, after giving an understanding of Traditional Knowledge as a whole, this chapter discusses about the traditional medicinal knowledge which main cause of concern for bio-diversity rich countries.

2.6 CHARACTERISTICS OF TRADITIONAL KNOWLEDGE

A CBD study identifies three dimensions that any protection regime for TK needs to acknowledge:

“A cultural aspect in which it reflects the culture and values of a community, a temporal aspect in which it is passed on through the generations, and slowly adapts to respond to changing realities and a spatial aspect where it relates to the territory or the relationship which a community has with its lands and waters traditionally occupied or used.”⁹⁹

99. CBD Secretariat, Development of Elements of Sui Generis Systems for the Protection of Traditional Knowledge, Innovations and Practices to Identify Priority Elements (Fifth meeting, 15-19 October 2007, Montreal) UNEP/CBD/WG8J/5/6 20 September 2007, para. 4

The cultural dimension of TK is a major distinguishing feature. TK refers to “traditional norms and social values as well as to mental constructs that guide, organize and regulate the people’s way of living and making sense of their world.”¹⁰⁰ The foremost preconception in understanding the notion of TK in this respect relates to the word “tradition.” The use of the term “tradition” in relation to TK has sometimes been construed as denoting “practices or beliefs and values that are ‘in the past,’ unchanging, and static.” This is attributed to the fact that “[n]on-Western knowledge frameworks, epistemologies, and epistemic schools were thoroughly ridiculed as ‘folk knowledge,’ ‘quackery,’ ‘black-magic’ and ‘voodoo.’”¹⁰¹

In a more objective conceptualization of TK, the “traditional” aspect of TK does not relate to “its object, nor its subject matter or content, nor its age or antiquity.”¹⁰² The “traditional” context of TK only implies that the customary rules and protocols that govern its creation, use, preservation, and passing down are “deeply rooted in their traditional location and community setting.”¹⁰³ Thus, the word “traditional” in TK suggests that norms, social

100. *Id.*, para, 12

101. Ikechi Mgbeoji, “Beyond Patents: The Cultural Life of Native Healing and the Limitations of the Patent System as a Protective Mechanism for Indigenous Knowledge on the Medicinal Uses of Plants” (2005) 5 Canadian Journal of Law and Technology at 4 and nn. 46. [Mgbeoji, “Beyond Patents”] arguing, “Given the dominance of the Western paradigm of “science,” there is a tendency to ethnicize and consider as culture-specific, unsophisticated and inferior, non-Western paradigms of knowledge.”

102. Indigenous peoples and local communities engage in the creation, preservation and transfer of knowledge in a continual manner as a means of survival and group identity, and not for the sake of financial gain. In real-life terms, there are other incentives that encourage creativity and inventiveness, including honor and recognition as evidenced and rewarded through publication, citation, academic tenure, prizes for academic achievement or demonstrations of skill in public competitions, and awards of government grants for research. Gupta Anil K., “Accessing Biological Diversity and Associative Knowledge Systems: Can Ethics Influence Equity?” cited in David R. Downes, “How Intellectual Property Could Be a Tool to Protect Traditional Knowledge” (2000) 25 Colum J Envtl L 253 at 260.

103. WIPO, Elements of A Sui Generis System for the Protection of Traditional Knowledge (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Fourth Session, Geneva, December 9 to 17, 2002) WIPO/GRTKF/IC/4/8 at para 27.

practices, and values that underpin TK are “intrinsically local and innate to a traditional community.”¹⁰⁴ In their often cited observation, the Four Directions Council, an organization representing the First Nations of Canada, points out that “what is ‘traditional’ about Traditional Knowledge is not its antiquity but ... the social process of learning and sharing knowledge, which is unique to each indigenous culture.”¹⁰⁵

In addition, the fact that TK is developed in a traditional manner does not mean that TK is neither sophisticated nor systematic.¹⁰⁶ TK often constitutes a “‘technical’ insight or wisdom gained and developed...through years of careful observation and experimentation [by ILCs] with the natural phenomena around them.”¹⁰⁷ Unlike formal knowledge, usually generated in laboratories or other places of systematic research and development through “formal processes of invention and innovation,” TK’s creation and use involves “an incremental, ‘trial and error’ method.”¹⁰⁸ Like formal science, TK involves “careful observation, experimentation, and validation,” albeit in an altogether different context and setting.¹⁰⁹

104. *Id.*

105. Four Directions Council, “Forests, Indigenous Peoples and Biodiversity, Contribution of the Four Directions Council to the Secretariat of the Convention on Biological Diversity, 15 January 1996” as quoted in D. A. Posey & G. Dutfield, “Mind the Gaps: Identifying Commonalties and Divergencies Between Indigenous Peoples and Farmers Groups” (Draft paper presented to the 5th Global Biodiversity Forum, Buenos Aires, 1-3 November 1996) at 3.

106. Nuno Pires de Carvalho, “From the Shaman’s Hut to the Patent Office: A Road Under Construction” in Mcmanis, “Biodiversity and the Law”, (arguing that “several traditional communities and Indigenous peoples do possess vast and articulated systems of knowledge...there is indeed TK that is extremely sophisticated and complex”).

107. Dennis M. Warren, *Using Indigenous Knowledge in Agricultural Development*, World Bank Discussion Paper 127 (1991) at 5.

108. *Id.*

109. For example, David R. Downes, “How Intellectual Property Could Be A Tool to Protect Traditional Knowledge” (2000) 25 Colum J Envtl L 253 at 258; Madhavi Sunder, “IP3” (2006) 59 Stanford Law Review; Madhavi Sunder, “The Invention of Traditional Knowledge” (2006) 70 Law & Contemp Probs 97 [Sunder, “Invention”]; Coenraad J. Visser, “Making Intellectual Property Laws Work for Traditional Knowledge” in Finger, J. M. & Philip Schuler, eds, *Poor People's Knowledge: Promoting Intellectual Property in*

Although “traditionality” relates to TK’s socio-cultural roots, societies and socio-cultural milieus constantly change as they continue to adopt new technologies and practices. This makes it difficult to determine the amount and extent of change in the method of knowledge production that may be required to label TK “traditional.”¹¹⁰ This brings up a related feature of TK: That “traditional” does not imply that the knowledge is “inert or ossified.”

While the tradition of learning and teaching is old, and the knowledge derived from this process may have originated a long time ago through intergenerational transmission, it is wrong to assume that TK’s process of knowledge creation and innovation is frozen in time. WIPO emphasizes that TK is “a vital, dynamic part of *the contemporary* lives of many communities *today*.” The contemporary aspect of TK is maintained, as it evolves to respond to the challenges posed by the social environment of individuals and communities through the process of local-level decision making and innovation, in its use to meet the demands of contemporary life, such as natural resource management, nutrition, food preparation, and health.

The innovation and creativity in TK is not static but “essentially dynamic,” as communities continue to adapt the knowledge that they inherited in an incremental fashion in order to respond to their “evolving needs and shared intellectual life.” TK has “consistently shown its capacity to

Developing Countries (Washington: World Bank, 2004); Terri Janke, *Minding Culture: Case Studies on Intellectual Property and Traditional Cultural Expressions* (Geneva: World Intellectual Property Organization, 2003) at 36, online: <<http://www.wipo.int/tk/en/studies/cultural/mindingculture/studies/finalstudy.pdf>>; Daphne Zografos, “Can Geographical Indications be a Viable Alternative for the Protection of Traditional Cultural Expressions” in Fiona Macmillan & Kathy Bowrey, ed, *New Directions in Copyright Law* (Cheltenham: Edward Elgar, 2006); Brad Sherman & Leanne Wiseman, “Towards an Indigenous Public Domain?” in P. Bernt Hugenholtz & Lucie Guibault, eds, *The Future of the Public Domain* (The Hague: Kluwer Law International, 2006).

110. F. Berkes, “Traditional Knowledge in Perspective” in Julian T. Inglis, ed, *Traditional Ecological Knowledge: Concepts and Cases* (Ontario: International Program on Traditional Ecological Knowledge and International Development Research Centre, 1993) at 3.

incorporate new ideas, technologies and categories” through the process of cultural and social transformation among and between communities (inter-generationally and trans-generationally).

TK is also characterized by its embodiment in cultural and spiritual contexts. This feature essentially distinguishes TK from simply useful information. Van den Daele characterizes TK as “embedded knowledge,” that is, knowledge that, besides its useful information, has social and cultural meanings.¹¹¹ In contrast, “Western scientific knowledge” is often uncritically characterized as disembodied and disembodied; it is “‘information’ which is global and impersonal, in contrast to knowledge as ‘culture’ which is local and personal.”¹¹² As information, TK “can be easily communicated beyond its original context”; yet, the inherent qualities that mark its traditionality (the social and cultural constituents) “begin to break down once it leaves the community” because these elements “are much less readily transmitted.”

Another distinctive feature is that TK is, in most cases, communally owned. Within the realm of communality, however, the system of TK may exhibit various types of ownership rights.¹¹³ The community as a whole, or individuals, elders, women, clans, lineages, etc., may have ownership rights,

111. Van den Daele, *Modern Science and Traditional Knowledge in Western Societies*, Wissenschaftszentrum Berlin, Berlin, 2001.

112. *Id.*

113. “Ownerships” of property has different contexts in Western and indigenous property systems. In the case of most ILCs, the prevailing system to control access to basic resources falls under communal property regime, in which individuals, elders, women, clans, lineages, etc., each have ownership rights within a given resource area and over specified resources within them under multiple rights. These rights may vary in their extent from one group to another, but they are inalienable in that others cannot take away or undermine them. See Darrell Addison Posey & Graham Dutfield, *Beyond Intellectual Property: Toward Traditional Resource Rights for Indigenous Peoples and Local Communities* (Ottawa: IDRC, 1996); Fikret Berkes, *Sacred Ecology: Traditional Ecological Knowledge and Resource Management* (Philadelphia: Taylor & Francis, 1999); Y. Henderson M. Battiste, *Protecting Indigenous Knowledge and Heritage: A Global Challenge* (Saskatoon: Purich, 2000).

which usually vary in their extent from one group to another.¹¹⁴ Locally specific systems of jurisprudence among ILCs govern the classification of knowledge as well as the procedures of its transfer and the modes of its utilization.¹¹⁵

Based on local jurisprudence and existing spiritual and cultural protocols, Barsh confirms that “some categories of knowledge may be attached to individual specialists, and other categories of knowledge to families, clans or the tribe or nation as a whole.”¹¹⁶ For example, Gupta recounts models of individual ownership of traditionally generated knowledge in the case of “grassroots-innovations.”¹¹⁷ Similarly, many of the attributes of individual ownership are manifested in the methods African shamans¹¹⁸ handle their knowledge and wisdom.¹¹⁹

114. For example, in IP policy, the theory of social planning is deployed to justify the imperatives of serving certain social and public interests. In the realms of copyrights, this theory is utilized to justify the trimming down of the copyright regime along certain lines, to create and nourish vibrant civil society in democratic institutions. See Fisher III, citing Neil Netanel, “Copyright and a Democratic Civil Society” (1996) 106 Yale Law Journal 283; Neil Netanel, “Asserting Copyright’s Democratic Principles in the Global Arena” (1998) 51 Va L R 217-329; Rosemary J. Coombe, “Objects of Property and Subjects of Politics: Intellectual Property Laws and Democratic Dialogue” (1991) 69 Texas Law Review 1853; Niva Elkin-Koren, “Copyright Law and Social Dialogue on the Information Superhighway: The Case Against Copyright Liability of Bulletin Board Operators” (1995) 13 Cardozo Arts & Entertainment Law Journal 345; Michael Madow, “Private Ownership of Public Image: Popular Culture and Publicity Rights” (1993) 81 California Law Review 125; William Fisher III, “Reconstructing the Fair Use Doctrine” (1988) 101 Harv L Rev 1659-1795 at 1744.

115. Russel Lawrence Barsh, “Indigenous Knowledge and Biodiversity” in Darrell Addison Posey, *Cultural and Spiritual Values of Biodiversity* (Nairobi: United Nations Environment Program, 1999) at 160.

116. *Id.*

117. A.K. Gupta, *Securing Traditional Knowledge And Contemporary Innovations: Can Global Trade Links Help Grassroots Innovations* (Invited Paper for World Trade Forum, Bern, Switzerland, August 27-29, 1999).

118. Shaman- A Shaman is defined primarily as a healer and spiritual counselor for his/her community. Shamans sometimes serve other roles within their community, such as; medicine man, officiant of ceremonies, priest, personal guide, and amateur psychiatrist. A Shaman may also work with the spirit world and the unseen energies that consist of our total reality. In many cultures a Shaman is considered to be a community pillar that assists with balancing energies between the living and the dead. In performing such work, there are many practiced ceremonies designed around assisting the healthy flow of energies between

Finally, the unique land-based feature of TK distinguishes it from other systems of knowledge. According to WIPO, TK is “generally regarded as pertaining to a particular people or its *territory*....”¹²⁰ Because of long-term association with a particular ecosystem, the communities who own TK have developed specific conservation ethics.¹²¹ Customary laws and protocols that

our dimensional states of reality. Shamans are also known as people who can enter altered states of consciousness in order to complete their work. The purpose of a Shaman is to be a spiritual servant of their community. The path of a Shaman is one that is lifelong. A true Shaman follows this path throughout their life and many times reincarnates to subsequently serve again as a Shaman.

Shamanism- Shamanism is not a religion, but a spiritual path based on community service. Shamanism is believed to be one of the oldest forms of spiritual practice, regardless of what Shamanism was called; its practice and principles predate all known religions. Although Shamanism has undergone some evolutionary transitions, it has remained relatively unchanged. Traditional Shamanism has usually been found in hunting and gathering tribes. Some of these cultures who have had Shamans in the past are; Native Americans, Australian Bushmen, African Native Tribes, South and Central Americans (Incas, Mayans, Aztecs), Eskimos, Many Siberian Tribes, as well as many tribes within the Oceanic and Asian peoples. Shamanistic practices can also be found in other cultures that may term their spiritual leaders under different names, but may also observe primarily earth based traditions.

Modern day Shamanism has an eclectic approach and is more in tune with the problems of our present day world. While drawing upon much of the same mythology and practice of the more primitive Shamanistic teachings, modern Shamans work to reform those areas harmful to the human spirit and the health of the planet.

119. H. Nwokeabia, *Why Industrial Revolution Missed Africa: A ‘Traditional Knowledge’ Perspective*, Economic (Addis Ababa: United Nations Commission for Africa, 2001).
120. Angela R. Riley, “Recovering Collectivity: Group Rights to Intellectual Property in Indigenous Communities” (2000) 18 *Cardozo Arts & Ent L J* 175; Ikechi Mgbeoji, “Patents and Traditional Knowledge of the Uses of Plants: Is a Communal Patent Regime Part of the Solution to the Scourge of Bio Piracy?” (2001) 9 *Ind J Global Legal Stud* 163 [Mgbeoji, “Scourge”]; Norman W. Spaulding III, “Commodification and Its Discontents: Environmentalism and the Promise of Market Incentives” (1997) 16 *Stan Envt’l L J* 294; Chidi Oguamanam, “Localizing Intellectual Property in the Globalization Epoch: The Integration of Indigenous Knowledge” (2004) 11 *Ind J Global Legal Stud* 135 at nn 1 [Oguamanam, “Localizing”]; Chidi Oguamanam, *International Law and Indigenous Knowledge: Intellectual Property Plant Biodiversity, and Traditional Medicine* (Toronto: University of Toronto Press, 2006) at 5 [Oguamanam, “International Law”].
121. For example, in IP policy, the theory of social planning is deployed to justify the imperatives of serving certain social and public interests. In the realms of copyrights, this theory is utilized to justify the trimming down of the copyright regime along certain lines, to create and nourish vibrant civil society in democratic institutions. See Fisher III, citing Neil Netanel, “Copyright and a Democratic Civil Society” (1996) 106 *Yale Law Journal* 283; Neil Netanel, “Asserting Copyright’s Democratic Principles in the Global Arena” (1998) 51 *Va L R* 217-329; Rosemary J. Coombe, “Objects of Property and Subjects of Politics: Intellectual Property Laws and Democratic Dialogue” (1991) 69 *Texas Law Review* 1853; Niva Elkin-Koren, “Copyright Law and Social Dialogue on the Information Superhighway:

are a basis for the creation, development, and survival of TK are “conceived as integral to the land and environment itself.”¹²² TK is intrinsically intertwined with the land that most ILCs occupied for millennia, with the accompanying local environment and ecology forming an integral part of their daily lives.¹²³ For most ILCs, TK “is of a piece with the landscape, with ancestral territories, and with cultural heritage, as inherently cultural creations in which their intellectual creations are inseparably embedded.”¹²⁴

The territorial features of TK relate to the primary focus of this thesis, i.e. assessing the instrumentality of GIs¹²⁵ to the protection of TKBAPs¹²⁶. Given the centrality of “placeness” to the agricultural economy of most ILCs, the protection scope of GIs may cover TK that is embedded in an agricultural landscape. The physical and human dimensions of “territoriality” constitute fundamental elements in the definition of GIs.

The following list of characteristics of traditional ecological knowledge is adapted from the research and writings of Clarkson et al. (1992); Berkes (1993); Doubleday (1993); Tyler (1993); Wavey (1993); Mitchell (1994); and Cole (n.d.). The list incorporates a non-indigenous view of traditional

The Case Against Copyright Liability of Bulletin Board Operators” (1995) 13 Cardozo Arts & Entertainment Law Journal 345; Michael Madow, “Private Ownership of Public Image: Popular Culture and Publicity Rights” (1993) 81 California Law Review 125; William Fisher III, “Reconstructing the Fair Use Doctrine” (1988) 101 Harv L Rev 1659-1795 at 18.

122. Indigenous peoples and local communities engage in the creation, preservation and transfer of knowledge in a continual manner as a means of survival and group identity, and not for the sake of financial gain. In real-life terms, there are other incentives that encourage creativity and inventiveness, including honor and recognition as evidenced and rewarded through publication, citation, academic tenure, prizes for academic achievement or demonstrations of skill in public competitions, and awards of government grants for research. Gupta Anil K., “Accessing Biological Diversity and Associative Knowledge Systems: Can Ethics Influence Equity?” cited in David R. Downes, “How Intellectual Property Could Be a Tool to Protect Traditional Knowledge” (2000) 25 Colum J Envtl L 253 at 61.

123. Russel Lawrence Barsh, “How Do You Patent A Landscape?” (1999) 8:1 International Journal of Cultural Property at 14-17 cited in *Id.* at 60.

124. *Id.*, 60.

125. GI refers to Geographical Indications.

126. TKBAP refers to Traditional Knowledge based agricultural products.

ecological knowledge but is based on discussions with, input from, and writings by indigenous people. Traditional ecological knowledge is:

- **Holistic:** all things are interconnected and nothing is comprehended in isolation;
- **Intuitive:** based on deeply held holistic understanding and knowledge;
- **Qualitative:** knowledge is gained through intimate contact with the local environment, while noting patterns or trends in its flora, fauna, and natural phenomena. It is based on data collected by resource users through observation and hands-on experience;
- **Transmitted intergenerationally by oral tradition:** teaching is accomplished through stories and participation of children in culturally important activities;
- **Governed by a Supreme Being:** the Creator defines a moral universe with appropriate laws;
- **Moral:** there are right ways and wrong ways to relate to the environment;
- **Spiritual:** rooted in a social context that sees the world in terms of social and spiritual relations among all life forms. All parts of the natural world are infused with spirit. Mind, matter, and spirit are perceived as inseparable. Traditional ecological knowledge, in practice, exhibits humility and a refined sense of responsibility; it does not aim to control nature;
- **Based on mutual well-being, reciprocity, and cooperation:** these promote balance and harmony between the well-being of the individual and the well-being of the social group;
- **Non-linear:** views time and processes as cyclical;

- Often contextualized within the spiritual: may be based on cumulative, collective practical and spiritual experience. Traditional ecological knowledge may be revised daily and seasonally through the annual cycle of activities (as required);
- **Communal:** general knowledge and meaning are shared among individuals horizontally, not hierarchically; and
- **Promoting of stewardship:** takes a proactive approach to environmental protection and an ecosystem approach to resource management.

Some main characteristics of Traditional Knowledge can summarised as follows:

- IK is generated within communities.
- IK is location and culture specific.
- IK is the basis for decision making and survival strategies.
- IK is not systematically documented.
- IK concerns critical issues of human and animal life: primary production, human and animal life, natural resource management.
- IK is dynamic and based on innovation, adaptation, and experimentation
- IK is oral and rural in nature.

This above stated knowledge is in the biodiversity rich countries (mainly developing and least developed) since time immemorial and nobody knows the real inventor of the knowledge. They know and use it and pass it to next generation. This is how; this knowledge passes through one generation to other. On the other side, most of the developed countries do not have this kind

of knowledge. Their knowledge is based on scientific development. We can understand the difference by comparing the two.

2.7 CATEGORIES OF TRADITIONAL KNOWLEDGE

Beyond a description of general features, the substance of TK that is the subject of analysis can be elucidated through a categorization of the diverse forms of TK. In recognition of the diverse nature, function and purpose of TK, various international forums address its protection in different areas of international law and policy-making. These areas include the governance of agricultural resources,¹²⁷ the conservation of biodiversity,¹²⁸ the protection of the human rights of indigenous peoples,¹²⁹ the combat of desertification,¹³⁰ the promotion of appropriate medicine,¹³¹ and the preservation of cultural diversity.¹³² In discussion regarding the legal

127. International Treaty on Plant Genetic Resources for Food and Agriculture, Opened for Signature on Nov. 3, 2001, FAO Res. 3/2003, Art. 9.1[ITPGRFA], Available at <ftp://ftp.fao.org/ag/cgrfa/it/itpgre.pdf> (Accessed on 17-06-15).

128. For example, in IP policy, the theory of social planning is deployed to justify the imperatives of serving certain social and public interests. In the realms of copyrights, this theory is utilized to justify the trimming down of the copyright regime along certain lines, to create and nourish vibrant civil society in democratic institutions. See Fisher III, citing Neil Netanel, "Copyright and a Democratic Civil Society" (1996) 106 Yale Law Journal 283; Neil Netanel, "Asserting Copyright's Democratic Principles in the Global Arena" (1998) 51 Va L R 217-329; Rosemary J. Coombe, "Objects of Property and Subjects of Politics: Intellectual Property Laws and Democratic Dialogue" (1991) 69 Texas Law Review 1853; Niva Elkin-Koren, "Copyright Law and Social Dialogue on the Information Superhighway: The Case Against Copyright Liability of Bulletin Board Operators" (1995) 13 Cardozo Arts & Entertainment Law Journal 345; Michael Madow, "Private Ownership of Public Image: Popular Culture and Publicity Rights" (1993) 81 California Law Review 125; William Fisher III, "Reconstructing the Fair Use Doctrine" (1988) 101 Harv L Rev 1659-1795 at 1744.

129. Declaration on the Rights of Indigenous Peoples, GA Res. A/61/295, 107th Plen. Mtg., (2007).

130. United Nations Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa, 17 June 1994, 33 I.L.M. 1328, Art. 16 (g) ["UNCDD"] .

131. WHO, Declaration of Alma-Ata (International Conference on Primary Health Care, Alma-Ata, 6-12 September, 1978).

132. WIPO, Model Provisions for National Laws on the Protection of Expressions of Folklore Against Illicit Exploitation and Other Prejudicial Actions, reprinted in 16 Copyright Bull 62 (1982) [Model provisions]; Universal Declaration of Human Rights, GA Res. 217(III), UN GAOR, 3d Sess., Supp. No.13, UN Doc. A/810(1948) Art. 27; the International Covenant

protection of TK in most of these forums, emerging practice distinguishes TK as a descriptive broader concept (*lato sensu*), from TK in a stricter legal and policy sense (*stricto sensu*).¹³³

TK *stricto sensu* refers to “the content or substance of knowledge – what is known – and distinguished, for example, from its distinctive form of expression and from the genetic resources that are frequently intertwined with TK.”¹³⁴ In this sense, TK *strict sensu* encompasses the technical knowledge itself which is not limited to a specific field. However, the realization of the intrinsic integration between genetic resources and TK has necessitated the consideration of the two in the same policy and legal framework. Genetic resources in the form of biodiversity are themselves the embodiment of TK and in the worldview of most ILCs, as explained above; there cannot be a distinction between TK and biodiversity as intangible and tangible components.¹³⁵ In this context, any distinction between genetic resources and TK at legal and policy levels would only be superficial.

on Economic, Social and Cultural Rights, 19 December 1966, 993 U.N.T.S. 3, Can TS 1976 No. 46, 6 I.L.M. 360, Art.15.

133. WIPO, Consolidated Survey of Intellectual Property Protection of Traditional Knowledge, WIPO/GRTKF/IC/5/7 (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Geneva, July 7-15, 2003) online: <www.wipo.int/edocs/mdocs/tk/en/wipo_grtkf.../wipo_grtkf_ic_5_7.doc>, para. 9. (accessed on 12-12-12).

134. The WIPO IGC describes TK strict sensu as “content or substance of knowledge resulting from intellectual activity in a traditional context, [including] the know-how, skills, innovations, practices and learning that form part of Traditional Knowledge systems, and knowledge embodying traditional lifestyles of indigenous and local communities, or contained in codified knowledge systems passed between generations. It is not limited to any specific technical field, and may include agricultural, environmental and medicinal knowledge, and knowledge associated with genetic resources.” WIPO, Glossary of Key Terms Related to Intellectual Property and Traditional Knowledge (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Second Inter-sessional Working Group, Geneva, February 21 to 25, 2011) WIPO/GRTKF/IWG/2/INF/2 at 23.

135. See IIED, et al, Sui Generis Systems for the Protection of Traditional Knowledge (Information for the Secretariat of the Convention on Biological Diversity, 31st October 2005) online: IIED <<http://www.iied.org/pubs/pdfs/G02378.pdf>> at 2 (noting, “Knowledge [for indigenous peoples] comes from spirits associated with biodiversity across the whole

The distinction between TK *stricto sensu* and TK *lato sensu* is pertinent in relation to the distinct forms of expressions of TK – signified by the well-established concept of “expressions of folklore.” The term “folklore” refers to “characteristic elements of traditional artistic heritage developed and maintained by a community or by individuals reflecting the traditional artistic expectations of such a community.”¹³⁶ In earlier times, the term “expression of folklore” was used to refer to the artistic heritage developed by communities with specific reference to their “literature, music, dance, games, mythology, rituals, customs, handicrafts, architecture, and other arts.”¹³⁷ To avoid the perceived pejorative connotation of “folklore”, “expressions of folklore” is, in current use, juxtaposed with “Traditional Cultural Expression” (TCEs) as in the phrase “traditional cultural expressions and folklore.”

Therefore, TCEs, as distinguished from TK *stricto sensu*, refer to the expressions of ideas by ILCs in the exercise of their cultural life, which – for lack of precise definition – are identified through characteristics and general criteria of the forms of expression.¹³⁸ In short, the expressions of TK are “akin to copyrightable subject matter (e.g., as performances and designs).”¹³⁹

spectrum from varieties, to species and ecosystems (eg. sacred plants, forests and mountains)”. (accessed on 12-12-12).

136. Draft Treaty for the Protection of Expressions of Folklore against Illicit Exploitation and Other Prejudicial Actions, Reprinted in Copyright [1985] 47-58, and in Doc. WIPO/GRTKF/IC/3/10, dated 25 March 2002, Annex IV at Art. 1.

137. UNESCO, Recommendation on the Safeguarding of Traditional Culture and Folklore (Adopted by the General Conference at Its Twenty-Fifth Session, Paris, 15 November 198)

138. The tangible and intangible forms of TCEs include, for example, verbal expressions or symbols (stories, epics, legends, tales, poetry, riddles, etc.); musical expressions (songs, instrumental music); expressions by action (dances, plays, ceremonies, rituals, other performances); tangible expressions (drawings, designs, paintings, including body painting carvings, sculptures, pottery, terracotta, mosaic, woodwork, metal ware, jewellery, baskets, needlework, textiles, glassware, carpets, costumes, musical instruments); intangible expressions reflecting traditional thought forms; architectural forms. Janice T. Pilch, Traditional Cultural Expression Library Copyright Alliance: Issue Brief (2009) at 1-2. Available at <http://wo.ala.org/tce/wpcontent/uploads/2009/10/pilchissuebrieftce.pdf> (Accessed on 12-11-11); see also C. B. Graber & M. Murri-Nenova, eds, Intellectual

The distinction between TK *stricto sensu* and TCEs has often been criticized on the ground that cultural expressions cannot be separated from the social and natural environment in which they are produced.¹⁴⁰ Indeed, TK and its forms of expression are inseparable. In the internal context of ILCs, for example, “the same body of customary law is likely to apply to both TK and TCEs.” In recognition of this, WIPO recommends a “holistic approach” in which the protection of TK and TCE are complementary and mutually supportive.¹⁴¹

Property and Traditional Cultural Expressions in a Digital Environment (Cheltenham: Edward Elgar, 2008).

139. Emanuela Arezzo, “Struggling Around the Natural Divide: The Protection of Tangible and Intangible Indigenous Property” 25 Cardozo Arts & Ent L J 367 at 371; According to the WIPO Intergovernmental Committee: ‘Traditional cultural expressions’ or ‘expressions of folklore’ are any forms, whether tangible and intangible, in which traditional culture and knowledge are expressed, appear or are manifested, and comprise the following forms of expressions or combinations thereof: (i) verbal expressions, such as: stories, epics, legends, poetry, riddles and other narratives; words, signs, names, and symbols; (ii) musical expressions, such as, songs and instrumental music; (iii) expressions by action, such as, dances, plays, ceremonies, rituals and other performances, whether or not reduced to a material form and, (iv) tangible expressions, such as, production of art, in particular, drawings, designs, paintings (including body-painting), carvings, sculptures, pottery, terracotta, mosaic, woodwork, metalware, jewellery, baskets, needlework, textiles, glassware, carpets, costumes; handicrafts; musical instruments; and architectural forms; which are: (aa) the products of creative intellectual activity, including individual and communal creativity; (bb) characteristic of a community’s cultural and social identity and cultural heritage; and (cc) maintained, used or developed by such community, or by individuals having the right or responsibility to do so in accordance with the customary law and practices of that community. See WIPO, The Protection of Traditional Cultural Expressions/ Expressions of Folklore: Draft Objectives and Principles (Intergovernmental Committee On Intellectual Property and Genetic Resources, Traditional Knowledge And Folklore, Tenth Session, Geneva, November 30 to December 8, 2006) WIPO/GRTKF/IC/10/4, Annex.
140. Christoph Antons, Traditional Knowledge, Traditional Cultural Expressions, and Intellectual Property Law in the Asia-Pacific Region (The Hague: Kluwer Law International, 2009) at 4; D.A. Posey, “Can Cultural Rights Protect Traditional Cultural Knowledge and Biodiversity?” in H. Niec, ed, Cultural Rights and Wrongs: A Collection of Essays in Commemoration of the 50th Anniversary of the Universal Declaration of Human Rights (Paris: UNESCO Publishing, 1998) at 43.
141. WIPO, The Protection of Traditional Knowledge: Draft Objectives and Principles (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Tenth Session Geneva, November 30 to December 8, 2006) WIPO/GRTKF/IC/10/5, para. 15.

Within the holistic context of TK and TCEs, however, a distinction between the two components is necessary for determining the appropriate subject matter of legal protection in a particular instrument, and for the choice of the appropriate legal tool that provides effective protection against appropriation by third parties. Regarding legal protection of TK externally, it is impractical to achieve effective protection in a holistic context.

Firstly, the legal and policy domain of protecting TCEs is distinct from that for TK (and its intrinsic components, genetic resources). The former is directly concerned with State's "cultural and artistic policy," a policy and legal domain distinct from a State's branch that deals with environmental and biodiversity protection. Secondly, as WIPO notes, "some legal tools are most useful in preventing third parties from misappropriating TK (*stricto sensu*)" whereas "other legal tools are more effective against misuse of TCEs."¹⁴²

The distinction between the two components of TK is discernable in current international law and policy on TK. For example, the CBD deals with TK in relation to genetic resources and biodiversity, thereby, excluding TK embedded in artistic and literary forms of expression.¹⁴³ Similarly, UNESCO is mainly concerned with TCEs and intangible cultural heritage issues that are not mostly related to biological resources, whereas WIPO, as an overarching global authority on IP policy, addresses TK in all categories where IP is implicated.

Distinctions can still be made based on a number of factors, such as "the degree of publicity" the knowledge has within a community or society,¹⁴⁴

142. *Id.*

143. Art. 10 of the CBD requires contracting parties to "protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements."

144. Based on the manner in which Traditional Knowledge is held, Gopalakrishnan (See N. S. Gopalakrishnan, "Impact of Patent System on Traditional Knowledge" (1998) CULR 219)

or depending on the way ILCs deal with certain aspects of their knowledge.¹⁴⁵ According to the distinction between TK *stricto sensu*, and TCEs – as explained above – the subject of TCEs lies outside the scope of inquiry in this thesis. Accordingly, attention will focus on TK *strict sensu* and genetic resources that are intrinsic to it.

2.8 IMPORTANCE OF TRADITIONAL KNOWLEDGE

The importance of “Traditional Knowledge” can be perceived by looking at simple facts: 85% to 90% of the basic livelihood need of the world’s poor (more than half of the world’s population, including indigenous and local communities) are based on direct use of biological resources (and related “Traditional Knowledge”) for food, medicine, shelter, transport, etc; over 1.4 billion poor farmers rely on farm saved seeds and local plants breeding techniques as their primary source of seed;¹⁴⁶ 57% of the top 150 brand name drugs prescribed during a six month period in 1993, contained at least one major active compound derived or patterned on compounds from biological diversity and of the 35 plant derived drugs included in the top 150 best selling drugs; 94% contained at least one compound with proven use in

identifies four categories of TK: Information commonly known to the society with or without documentation and is in constant use by the people; ii) Information that is well documented and is available to the public for examination and use; iii) Information that is not documented or commonly known but known only to small groups of people and not revealed to others outside the group; iv) Information known only to individuals or members of the families and none else. E.g. the information used by the village medical practitioners for treatment.

145. In some cases they may wish to keep TK secret within a community through absolute protection and secrecy in the case of, for example, sacred knowledge, or, “only transfer it as a gift, in that its spiritual character is opposed to marketability.” In other cases, the particular community may want “autonomy to decide if and how the information is used ... or it can wish to market the information... insisting upon fairness of the transaction and the sharing of the benefits.” Still in some circumstances, such as with knowledge that is generally known, the protective need of the community may rest on “the relatively free access to knowledge, but with compensation for the holders and/or sharing of benefits resulting from its use.”

146. The Crubile II Group. Seeding Solutions. Volume I: Policy options for genetic resources. People, Plants and Patents revised. IDRC, IPGRI, and Dag Hammarskjold Foundation, Italy, 2000, p. 1.

traditional medicinal practices by indigenous and local communities.¹⁴⁷ Areas of high concentration of biodiversity and the location of indigenous and local communities often coincide and evidence a pattern of close interrelation between nature, man and knowledge. Communities conserve, maintain, enhance and, in many instances, act as guardians of natural and biological resources.

On the other hand, the importance of Traditional Knowledge also reflects itself in other ways. Modern technologies, including biotechnology, which manipulate, use, adapt or transform biological resources often, use, either directly or indirectly indigenous knowledge at some point during product research and development process. Whether using ethno botanical information found in scientific literature or databases or through direct consultation and interaction with indigenous peoples; Traditional Knowledge serves an important purpose as a valuable input directing and orienting research activities of universities and companies particularly during initial stages of research. Sectors which have benefited from these inputs include food, beverages, pharmaceuticals, chemicals, horticulture, agriculture, construction materials and cosmetics.¹⁴⁸

2.9 TRADITIONAL KNOWLEDGE IN MEDICAL FIELD

Much of traditional medicine has been used for generations and has been passed on inter-generationally. Hence, traditional medicine is not a static body of knowledge for it continues to evolve with the practices of the individuals or communities that hold and use it. Like other bodies of knowledge, it builds on incrementally through

147. For further information see: Grifo, Francesca. The Origins of Prescription Drugs. In: Francesca Grifo and Joshua Rosenthal (eds.) Biodiversity and Human Health. Washington DC, Island Press, 1997.

148. Ten Kate, Kerry and Larid, Sarah, "The Commercial Use of Biodiversity. Access to Genetic Resources and Benefit Sharing" *Earthscan Publications Ltd. London*, 1999.

improvement on and additions to old knowledge. As such, traditional medicine consists of knowledge received from the past and handed down from generation to generation as well as recent knowledge that may be the product of deliberate experimentation and observation. Individually and collectively, the health practitioners variously contribute to the pool of existing medical knowledge.

Traditional or indigenous medicine encompasses knowledge and practices used for diagnosis, prevention and cure. Traditional medicine is also commonly referred to as alternative medicine because it is the source of “alternative” health care (to “modern” medicine). A greater part of indigenous knowledge refers to the properties of natural materials especially medicinal plants, animal parts and minerals. Due to the extensive use of plant materials, traditional medicine is associated with herbalism. However, animal-based medicines also play a significant role in healing practices of many traditional health practitioners in India.

In addition, traditional medicine encompasses a great variety of methods of diagnosis and treatment, including physical, mental and spiritual therapies.² The application of such methods is largely influenced by the culture and beliefs dominant in a particular community to the extent that they may be ineffective when applied in a different context.¹⁴⁹ Thus traditional medicine includes knowledge concerning medicines and their use (appropriate dosage, particular forms of administration, etc.), as well as the procedures and rituals applied by healers as part of their traditional healing methods.¹⁵⁰

149. www.mitpressjournals.org/doi/abs/10.1162/itgg.2006.1.3.67, (Accessed on 15-02-11).

150. www.who.int/medicinedocs/en/d/Js4917e/4.1.html - 54k, (Accessed on 15-02-11).

2.10 KINDS OF TRADITIONAL MEDICAL KNOWLEDGE

While some products used in the context of traditional medicine, as well as the processes for their preparation, may find protection of IPRs, some methods of diagnosis and treatment generally would not, due its peculiarities, unless specifically protected under national law.¹⁵¹ It is this knowledge, products and process that have become of concern with regard to IPRs.

2.10.1 INDIVIDUAL KNOWLEDGE

Possession is probably the single most important basis of defining intellectual property rights. On the basis of possession, knowledge may be categorized in individual knowledge, distributed knowledge and communal knowledge.¹⁵² In some cases, individuals produce traditional medical knowledge without any interface with the community or outsiders. In such cases, the knowledge is held by individuals (individual knowledge).¹⁵³ For instance, some individual traditional healers continuously improve or innovate on an existing body of knowledge through sustained observation and experimentation. Some traditional health practitioners have appropriated modern biomedical technologies such as the use of x-rays and laboratory tests to improve on their knowledge.¹⁵⁴

2.10.2 DISTRIBUTED KNOWLEDGE

In other cases, knowledge is in the possession of some, but not all members of a group (distributed knowledge). In such cases, the knowledge is asymmetrically distributed among individuals within a group, even though such individuals may not be aware that others in and outside the community

151. www.codesria.org/Links/conferences/general_assembly11/papers/ngetich.pdf, (Accessed on 15-02-11).

152. *Id.*

153. *Id.*

154. *Id.*

share the same knowledge. “Individual” and “distributed” knowledge are often interconnected in that sometimes healers compare notes and share remedies across quite wide geographic areas.

2.10.3 COMMUNAL KNOWLEDGE

Certain medical knowledge may be available to virtually all members of a group (“communal” knowledge). In such a case, the knowledge is freely available to its members although it may concentrate among the old members of the society. In every community, for example, there are plants, which are well known to have some medicinal properties.

2.11 COMMERCIAL VALUE OF TRADITIONAL MEDICINAL KNOWLEDGE

The commercial value of traditional medicine can be directly appropriated by the knowledge holders or through transmission of knowledge to researchers and companies, domestic or foreign. Traditional medicine can provide some useful leads or clues “sign posts” for the screening of natural products for therapeutic benefit. Traditional Knowledge may also be useful to confirm research results produced in the laboratory and complement scientific testing, including safety and efficacy.¹⁵⁵

The commercial value of traditional medicine may be derived from different activities, such as cultivation of medicinal plants for sale or production and distribution of herbal medicines. However, in India, Pakistan, Brazil, Colombia, Ecuador, Mexico and Kenya where the majority of the population relies greatly on traditional medicine,

155. From WHO document on “Protection and Promotion of Traditional Medicine - Implications for Public Health in Developing Countries”. Available at <http://apps.who.int/medicinedocs/en/d/Js4917e/4.5.html> (Accessed on 14-12-12).

there is virtually no investment in cultivation of medicinal plants.¹⁵⁶ Instead, many communities depend on natural forests to provide the majority of plant material consumed by the herbal medicine industry.

2.12 TRADITIONAL MEDICAL KNOWLEDGE AND INTELLECTUAL PROPERTY

Intellectual Property Rights (IPRs) are granted to individuals or juridical persons who claim to be inventors or creators. Such rights may apply to a broad range of creative expressions, designs, products and processes, provided that certain requirements and conditions are met. In the case of patents, the claimed inventions must be novel (that is, not publicly available or disclosed), convey an inventive activity and, in most jurisdictions, be capable of industrial application.¹⁵⁷ For trade secrets the knowledge must be of actual or potential commercial value.

Although there is, no reason why such categories of rights may not apply to various expressions of Traditional Knowledge, including traditional medicine, there are several characteristics of traditional medicine that create barriers to protection through the use of existing forms of IPRs.¹⁵⁸ Since traditional medicinal knowledge does not fulfill the requirements of new IPR regime therefore it can be protected in the same manner as intellectual property in present IPR scheme.

2.13 NEED FOR PROTECTION OF TRADITIONAL KNOWLEDGE

The development of new technology and the new use of

156. Sophia Twarog and Promila Kapoor (Editors), "Protecting And Promoting Traditional Knowledge: Systems, National Experiences And International Dimensions" United Nations Conference on Trade and Development, UNITED NATIONS New York and Geneva, 2004. Available at http://unctad.org/en/docs/ditcted10_en.pdf (Accessed on 16-08-12).

157. www.codesria.org/Links/conferences/general_assembly11/papers/ngetich.pdf, (Accessed on 15-02-12).

158. www.who.int/medicinedocs/en/d/Js4917e/4.html - 52k, (Accessed on 15-02-12).

Traditional Knowledge based products today is the major threat to the survival of many of these communities. The modern cultural industries as well as the manufacturing industries now commercially exploit the Traditional Knowledge based products using new technology without the permission and sharing of profits with the communities. It is possible today to bring out new products or find out new use of existing products based on Traditional Knowledge utilizing the technological developments in the field of biotechnology. This is proved beyond doubt particularly in the field of medicines, agriculture etc. The bio-prospecting help the scientists in the modern pharmaceutical research laboratories to get the know how to develop new products or new use of existing products. Similarly, traditional designs of the articles are reproduced by the modern industries for its application in the consumer products.¹⁵⁹ The development of new products or new use of existing products enable the industries to get protection for these products through the formal intellectual property laws Traditional Knowledge is generally associated with biological resources and is invariably an intangible component of such a biological resource.¹⁶⁰ Traditional Knowledge has the potential of being translated into commercial benefits by providing *leads/clues* for development of useful practices and processes for the benefits of mankind.¹⁶¹ The valuable *leads/clues* provided by TK save time, money and investment of modern biotech and other industries into any research and product

159. S.K. Tripathi, "Traditional Knowledge:Its significance and implications", Indian Journal of Traditional Knowledge, Vol. 2(2), April 2003,p. 97.

160. *Id.*

161. From the report published by Tamil Nadu Technology Development & Promotion Centre (TNTDPC), a joint initiative of the Government of Tamil Nadu and the Confederation of Industry on "Case Study Of The Leather Industry In Case Study Of The Leather Industry In Tamil Nadu Tamil Nadu" available at <http://www.tntdpc.com/technoblaze/may/casestudy.pdf> (Accessed on 12-05-12).

development. Logically, therefore, a share of such benefits should accrue to the creators and/or holders of such Traditional Knowledge. Some countries have specific legislation protecting this kind of knowledge while some other countries feel their existing IPR regime protect such knowledge. A regional policy has to be developed for the protection of indigenous knowledge related to biodiversity and which includes agriculture, medicinal, ecological related knowledge; and also for the protection of other Traditional Knowledge relating to folklore.

The need for protection of Traditional Knowledge is to stop biopiracy and misappropriation of Traditional Knowledge. The need for its protection is not only legal but ethical and moral too. Misappropriation and biopiracy can be understood as follows:

2.13.1 MISAPPROPRIATION

The nature of Traditional Knowledge is such that more of it is transmitted orally than written down. This poses particular problems when parties not authorised by the holder of that knowledge seek to obtain IPRs over it. In the absence of any accessible written record (Now in India we have TKDL), a patent examiner in another country is unable to access documentation that would challenge the novelty or inventiveness of an application based on Traditional Knowledge. The only option for an aggrieved party, be it the holders of the knowledge, or someone representing them, is to challenge the patent during the granting process or after grant, where national laws permit. For instance, this is what the Indian Government achieved by overturning the patents on basmati¹⁶² and turmeric¹⁶³ in the US. The presence of administrative or quasi-judicial patent opposition or re-examination

162. U.S. patent number 5663484.

163. U.S. patent number 5401504.

procedures has facilitated the overturning of these patents. In the absence of such procedures it would have been necessary to instigate proceedings before the relevant court with the inherent cost and time implications. Even with such procedures, it is extremely difficult and costly for developing countries to monitor and challenge IPRs issued all around the world. It is to be suggested, a possible way of assisting countries to monitor patents granted on inventions consisting of, or developed from, acquired biological material and associated knowledge.

2.13.2 BIOPIRACY

Bio-piracy is a wider term than misappropriation. Bio-piracy is defined as the misappropriation of Traditional Knowledge of indigenous communities for the purpose of seeking exclusive patent ownership over the knowledge.

There is no accepted definition of “biopiracy.” The Action Group on Erosion, Technology and Concentration (ETC Group)¹⁶⁴ defines it as “the appropriation of the knowledge and genetic resources of farming and indigenous communities by individuals or institutions seeking exclusive monopoly control (usually patents or plant breeders’ rights) over these resources and knowledge.”

Biopiracy is found in three forms, varying by the extent to which they are piratical:

164. ETC Group works to address the socio-economic and ecological issues surrounding new technologies that could have an impact on the world’s poorest and most vulnerable people. It investigates ecological erosion (including the erosion of cultures and human rights); the development of new technologies (especially agricultural but also other technologies that work with genomics and matter); and it monitors global governance issues including corporate concentration and trade in technologies. It operates at the global political level. It works closely with partner civil society organizations (CSOs) and social movements, especially in Africa, Asia and Latin America. Available at <http://www.etcgroup.org/> (official website). (Accessed on 12-05-12).

2.13.3 BIO-PROSPECTING

The least piratical form of biopiracy is bio-prospecting. Bio-prospecting has been defined as the process by which someone discovers an unknown plant or organism.¹⁶⁵ After discovery, scientists conduct further research into the plant or organism that often leads to the discovery of unknown properties. Controversy surrounding bio-prospecting arises when these discoveries include Traditional Knowledge and are manipulated to make them patentable.

2.13.4 DISCOVERY OF UNKNOWN PROPERTIES IN KNOWN PLANTS AND ORGANISMS

The second type of biopiracy involves properties discovered in known plants and organisms that are slightly different from the regular species, and therefore, patentable. The story behind the Enola bean patent provides an example of this type of biopiracy. In 1999, the United States Patent Office (“USPO”) granted a Colorado man, Larry Proctor, a patent after he claimed he had developed a new field bean variety that produces distinctly colored yellow seed which remains relatively unchanged by season. In fact, Proctor achieved his “invention” by simply purchasing some beans in a market in Mexico and planting them in Colorado. When self-pollinated and harvested three times, the resulting Enola bean remains yellow in colour from season to season. The USPO granted the patent¹⁶⁶ for developing the bean in a new colour, but it was challenged by the International Centre for Tropical Agriculture (ICTA). The USPO initially upheld the patent, concluding that colour was enough to meet the novelty requirement for a patent. Critics argued the invention was obvious, however, since the inventive process consisted simply of intensively

165. Gavin Stenton, *Biopiracy within the Pharmaceutical Industry: A Stark Illustration of How Abusive, Manipulative and Perverse the Patenting Process can be Towards Countries of the South*, 26 E.I.P.R., 17 (2004), Available at <http://scholarship.law.berkeley.edu/cgi/viewcontent.cgi?article=1215&context=blrlj> (Accessed on 12-05-12).

166. U.S. Patent No. 5,894,079 (issued Apr. 13, 1999).

breeding the seeds. After a renewed challenge by the ICTA, in April 2008, the USPO rejected all of the patent claims associated with the Enola bean.

2.13.5 THE EXPLOITATION OF TRADITIONAL KNOWLEDGE

The third and most piratical type of bio-piracy is the exploitation of Traditional Knowledge. The pozol patent represents an instance of when Traditional Knowledge has been exploited. Pozol is a fermented Mexican drink, invented by the Mayan people centuries ago. The health-promoting and antibacterial properties of pozol led a Dutch corporation and the University of Minnesota to extract *bacillus subtilis* from pozol to use as a natural inhibitor of unwanted flora in foods and feeds. A patent¹⁶⁷ was issued to the parties, but they did not compensate the Mayan community for the invention of their ancestors. Consequently, critics argue that the patenting of the isolated micro organism, which is the active component, rather than the drink itself, constituted an exploitation of Traditional Knowledge. Indigenous communities have since demanded the Mexican government adopt anti-prospecting legislation to protect Traditional Knowledge like pozol.

These are only some illustrations. There has been exploitation of Indian Traditional Knowledge as well which has been discussed in this chapter, in the later part.

The following have also been described as “bio-piracy”:

1. THE GRANTING OF “WRONG” PATENTS

These are patents granted for inventions that are either not novel or are not inventive having regard to Traditional Knowledge already in the public domain. Such patents may be granted due either to oversights during the examination of the patent or simply because the patent examiner did not have

167. US Patent No. 5919695.

access to the knowledge. This may be because it is written down but not accessible using the tools available to the examiner, or because it is unwritten knowledge. A WIPO led initiative¹⁶⁸ to document and classify Traditional Knowledge seeks to address some of these problems.

2. THE GRANTING OF “RIGHT” PATENTS

Patents may be correctly granted according to national law on inventions derived from a community’s Traditional Knowledge or genetic resources. It could be argued this constitutes “biopiracy” on the following grounds¹⁶⁹:

- Patenting standards are too low. Patents are allowed, for instance, for inventions which amount to little more than discoveries. Alternatively, the national patent regime (for example, as in the US) may not recognise some forms of public disclosure of Traditional Knowledge as prior art.
- Even if the patent represents a genuine invention, however defined, no arrangements may have been made to obtain the prior informed consent (PIC) of the communities providing the knowledge or resource, and for sharing the benefits of commercialisation to reward them appropriately in accordance with the principles of the CBD.

2.14 CASE ILLUSTRATIONS OF BIOPIRACY

2.14.1 TURMERIC-THE GRANDMOTHER’S RECIPE¹⁷⁰

Turmeric (*Curcuma longa*) is a plant of the ginger family yielding saffron-colored rhizomes used as a spice for flavoring Indian cooking. Its

168. In 2000, WIPO members established an Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (IGC), and in 2009 they agreed to develop an international legal instrument (or instruments) that would give Traditional Knowledge, genetic resources and traditional cultural expressions (folklore) effective protection. Such an instrument could range from a recommendation to WIPO members to a formal treaty that would bind countries choosing to ratify it.

169. www.iprcommission.org/papers/pdfs/final_report/Ch4final.pdf, (Accessed on 15-11-12).

170. <http://www.law.ed.ac.uk/ahrb/publications/online/varkey.htm>, (Accessed on 20-04-12).

unique properties also make it an effective ingredient in medicines, cosmetics and as a color dye. As a medicine, it is traditionally used to heal wounds and rashes. In March 1995, two expatriate Indians to the University of Mississippi Medical Centre, Jackson, (Suman K Das and Hari Har P. Cohly) were granted a US patent for turmeric to be used to heal wounds.

The Indian Council for Scientific and Industrial Research (CSIR) filed a case with the US Patent Office challenging the patent on the grounds of “prior art”, i.e., existing public knowledge. CSIR said turmeric has been used for thousands of years for healing wounds and rashes and therefore its use as a medicine was not a new invention. CSIR also presented an ancient Sanskrit text and a paper published in 1953, in the Journal of the Indian Medical Association. The US Patent Office upheld the objection and cancelled the patent. The turmeric case failed to meet the novelty criteria.

2.14.2 THE CASE OF NEEM

Neem extracts can be used against hundreds of pests and fungal diseases that attack food crops; the oil extracted from its seeds can be used to cure cold and flu; and mixed in soap, it provides relief from malaria, skin diseases and even meningitis. The European Patent Office (EPO) revoked in its entirety Patent number 436257, which had been granted to the United States of America and the multinational corporation W.R. Grace for a fungicide derived from seeds of the Neem tree following extensive testimony by expert witness, the 4-person panel judged that the claimed “invention” was lacking in “inventive step,” which is a prerequisite to obtaining patent protection. The panel had earlier ruled that the USA/Grace neem fungicide product was lacking in “novelty,”

another patent criterion, and established that its properties and use were “prior art” years before the “proprietors” applied for a patent.

2.14.3 JEEVANI-THE MIRACLE DRUG

“Jeevani” is a restorative, immuno-enhancing, anti-stress and anti-fatigue agent, based on the herbal medicinal plant *arogyapaacha*, used by the Kani tribals of Kerala in their traditional medicine. Within the Kani tribe the customary rights to transfer and practice certain traditional medicinal knowledge are held by tribal healers, known as *Plath is*. The knowledge was divulged by three Kani tribal members to the Indian scientists who isolated 12 active compounds from *arogyapaacha*, developed the drug “Jevaani”, and filed two patent applications on the drug (and another patent based on the same plant, but for different use). The technology was then licensed to the Arya Vaidya Pharmacy, Ltd., an Indian pharmaceutical manufacturer pursuing the commercialization of Ayurvedic herbal formulations. A Trust Fund was established to share the benefits arising from the commercialization of the TK-based drug “Jevaani”. The operations of the Fund with the involvement of all relevant stakeholders, as well as the sustainable harvesting of the *arogyapaacha* plant, have posed certain problems which offer lessons on the role of intellectual property rights in benefit-sharing over medicinal plant genetic resources and traditional medicinal knowledge. The health tradition of the Kani tribes inhabiting the forests of the Western Ghat region of Kerala is quite rich. The herbal lore of this tribal community of a large number of wild plants found in the flora-rich forests of the Western Ghats holds a lot of potential for the future. Conservation of biodiversity and related knowledge systems thus has to be an important objective of any benefit-sharing system apart from the improvement of

local livelihood support systems.

While the Kani informants had used the plant fruits for vitality and energy, the scientists had made the preparation by using the leaves of the plant. But the fact that the plant was being used for the same purpose for which local people used it underlined the logic of benefit-sharing. After all if the local communities had not conserved the biodiversity, the probability of scientists making any selection at all will be remote or nil. In cases where local communities provide the lead and the use of the biological resource in the TK is identical to the use of the resource claimed in the patent application, the case stands for:

- sharing intellectual property, i.e., shared inventorship,
- shared licensing agreement, and
- common benefit-sharing.

The current TRIPs led IPR system cannot protect Traditional Knowledge for three reasons¹⁷¹:

First, the current system seeks to privatize ownership and is designed to be held by individuals or corporations, whereas Traditional Knowledge has collective ownership. *Second*, this protection is time-bound, whereas Traditional Knowledge is held in perpetuity from generation to generation. *Third*, it adopts a restricted interpretation of invention which should satisfy the criteria of novelty and be capable of industrial application, whereas traditional innovation is incremental, informal and occurs over time. A sui generis, or alternative law, is therefore necessary to protect Traditional Knowledge.

171. Minaketan Bag and Rashmi Pramanik, "Commodification of Indigenous Knowledge: It's Impact on Ethno- medicine", IOSR Journal of Computer Engineering (IOSRJCE), Volume 7, Issue 4 (Nov. - Dec. 2012), p. 13.

2.14.4 HOODIA CACTUS

The San, who live around the Kalahari Desert in southern Africa, have traditionally eaten the Hoodia cactus to stave off hunger and thirst on long hunting trips.¹⁷² In 1937, a Dutch anthropologist studying the San noted this use of Hoodia. Scientists at the South African Council for Scientific and Industrial Research (CSIR) only recently found his report and began studying the plant. In 1995 CSIR patented Hoodia's appetite-suppressing element (P57).¹⁷³ In 1997 they licensed P57 to the UK biotech company, Phytopharm. In 1998, the pharmaceutical company Pfizer acquired the rights to develop and market P57 as a potential slimming drug and cure for obesity (a market worth more than £6 billion), from Phytopharm for up to \$32 million in royalty and milestone payments.¹⁷⁴ On hearing of possible exploitation of their Traditional Knowledge, the San People threatened legal action against the CSIR on grounds of "biopiracy." They claimed that their Traditional Knowledge had been stolen, and CSIR had failed to comply with the rules of the Convention on Biodiversity, which requires the prior informed consent of all stakeholders, including the original discoverers and users. Phytopharm had conducted extensive enquiries but were unable to find any of the "knowledge holders". The remaining San were apparently at the time living in a tented camp 1500 miles from their tribal lands.¹⁷⁵ The CSIR claimed they had planned to inform the San of the research and share the benefits, but first wanted to make sure the drug proved successful. In March 2002, an understanding was reached between the CSIR and the San whereby the San, recognised as the custodians of Traditional Knowledge associated with the

172. B. Andrew Lustig, Baruch A. Brody, Gerald P. McKenny, "Altering Nature: Volume I: Concepts of 'Nature' and 'The Natural' in Biotechnology Debates", Springer Science & Business Media, 2008, p.262.

173. *Id.*

174. *Id.*

175. *Id.*

Hoodia plant, will receive a share of any future royalties. In 2003, the South African San Council made an agreement with CSIR in which they would receive from 6 to 8% of the revenue from the sale of *Ho. gordonii* products.¹⁷⁶ The patent was later sold to Unilever, which marketed hoodia products as diet supplements.¹⁷⁷ *Hoodia* is currently listed in Appendix II to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), which includes species not currently considered endangered but are at risk if trade is not controlled.¹⁷⁸

2.14.5 CASE OF KAVA (PIPER METHYSTICUM FORSTER)

Kava is an important cash crop in the Pacific, where it is highly valued as the source of the ceremonial beverage of the same name. Over 100 varieties of Kava are grown in the Pacific, especially in Fiji and Vanuatu, where it was first domesticated thousands of years ago. In North America and Europe, Kava is now promoted for a variety of uses. French company L'Oreal - a global giant with US \$10 billion a year in sales - has patented the use of Kava to reduce hair loss and stimulate hair growth.¹⁷⁹

2.14.6 QUINOA (CHENOPODIUM QUINOA WILLD.)

Quinoa is a staple food crop for millions in the Andes in South America, especially Quechua and Aymara people who have bred a multitude of quinoa varieties. One traditional quinoa variety, Apelawa, is the subject of US patent 5,304,718 held by two professors from Colorado State University

176. http://www.csw.ucla.edu/publications/newsletters/2010-2011/article-pdfs/Apr11_Foster.pdf (Accessed on 12-06-12).

177. Saskia Vermeulen, "Contextualizing 'Fair' and 'Equitable': The San's Reflections on the Hoodia Benefit-Sharing Agreement Local Environment" Researchgate, Vol. 2 Issue-4. Available at <http://www.researchgate.net/> (Accessed on 12-06-12)

178. CITES Appendices I, II and III. Available at <http://cites.org/eng/app/appendices.php> (Accessed on 12-4-12).

179. Rai, Saritha, "India-U.S. Fight on Basmati Rice is mostly settled", The New York Times 2001.

who claim the variety's male sterile cytoplasm is key to developing hybrid quinoa. The patent claims any quinoa crossed with male sterile Apelawa plants.¹⁸⁰

2.14.7 THE JAMUN CASE

It is a plant, known for its anti-diabetic properties. It is common knowledge and everyday practice in India. Its use in the treatment of diabetes is documented in authoritative treatises such as the 'Wealth of India', and the 'Treatise on Indian Medicinal Plants. A US patent was granted in 1999 to Cromak Research Inc., based in New Jersey, USA. The assignees were three non-resident Indians.¹⁸¹

The indigenous knowledge and use of the Jamun consist of prior art, that is, no patent should be given where prior art exists, since patents are supposed to be granted only for new inventions on the basis of novelty and non-obviousness. As Article 102 of the US Patent Law, which defines prior art does not recognise technologies and methods in use in other countries as prior art. Because of this, the Jamun could be patented in the USA.

2.14.8 THE CASE OF BT COTTON

Prior to colonization, cotton was traded in the Indus Valley as mainly a Luxury good. It was only in the 19th century, after colonization that cotton cultivation followed a more mass production like structure.

Cotton production is a staple of the Indian agricultural economy. Some 7 million farmers depend on the crop for sustainable living, and overall 21% of all cotton produced globally comes from India. However, cotton is a very

180. <http://www.tkd1.res.in/tkd1/langdefault/Common/Biopiracy.asp?GL=Eng> (Accessed on 12-04-12).

181. <http://lup.lub.lu.se/luur/download> (Accessed on 12-08-11).

expensive crop to cultivate. Over half of India's total pesticides (40,000 tonnes) are used in the upkeep of cotton cropland.¹⁸²

In 1998 Monsanto began a series of Bt cotton trial tests in India, albeit illegally. Monsanto did not apply for trial testing clearance, and was not given any sort of formal approval to conduct studies on rural land. After going public with the results of their trial tests, Monsanto promoted Bt cotton as the perfect cost-cutting crop for rural India. It was claimed that yield output would increase to 3,300 pounds per acre. Moreover, Bt cotton would need to be sprayed approximately 2.6 times less than both organic and hybrid cotton. Even though inputs were more expensive, the genetically engineered seed would be sprayed sparingly, ultimately reducing the cost of cultivation by 30% to 40% at least. With promises of higher yields and lower costs, the Indian government officially approved three Bt cotton hybrids (MECH 12, MECH 162, MECH 184) for clearance in 2002.¹⁸³ This clearance was given to Monsanto in conjunction with the Maharashtra Hybrid Seed Company (Mahyco). Bt cotton, was the first GM seed to be given clearance by the Indian government and is now viewed as the example of how agro-business conglomerates impact vulnerable rural communities.

Farmer suicides in Andhra Pradesh and Maharashtra had increased after Bt cotton was both approved and promoted by governing officials. The financial stress associated with Bt cotton, has indeed been grave. Moreover, with the adoption of such GM seeds and subsequent failure, many rural farmers had increasingly felt deep remorse. This sentiment of loss is a result of much regret associated with leaving cultural farming techniques, which carried with a sense of community and family.

182. <http://www.sikharchives.com/?p=5505> (Accessed on 12-08-11).

183. *Id.*

2.14.9 SOME OTHER EXAMPLES

To cite some more examples of biopiracy, the plant *Phyllanthus amarus Schum.et Thonn.* is used for Ayurvedic treatment for jaundice, a US patent has been taken for use against Hepatitis B.¹⁸⁴ The plant *Piper nigrum Linn.* is used for Ayurvedic treatment for vitiligo (a skin pigmentation disorder). A patent has been taken in UK for the application of a molecule from *Piper nigrum Linn.* for use in treatment of vitiligo.¹⁸⁵

Moreover, a well known example of seed patenting is the case of Monsanto and Indian Wheat. Monsanto, the world's largest genetically modified seed company was awarded a patent¹⁸⁶ on **Nap Hal**, a strain of Indian wheat in 2003 by the European Patent Office. The patent covers wheat exhibiting certain kinds of qualities making it suitable for baking. With this patent, Monsanto has acquired the monopoly on the farming, breeding and processing of a number of wheat varieties.¹⁸⁷

Monsanto's acquiring the patent of **Nap Hal**, the wheat used for making chapattis – a flat bread staple of North India, led to a fear that indigenous people would have to pay royalties for making or selling chapattis. **Nap Hal's** qualities are the result of generations of farmers in India who spent years crossbreeding crops and collective, not corporate, efforts should be recognized.”¹⁸⁸

The controversy here was that Monsanto said that they got **Nap Hal** from a gene bank. In Monsanto's patent claim they said that **Nap Hal** was not

184. <http://www.tkd1.res.in/tkd1/langdefault/common/BioPiracy> (Accessed on 12-08-11)

185. *Id.*

186. Patent No.-EP 445929.

187. Vandana Shiva, “Monsanto's Biopiracy”, Available at <http://www.countercurrents.org/en-shiva270404.htm> (Accessed on 12-11-12).

188. John Upton, “Monsanto Bio- pirating Indian wheat”, Available at <https://www.organicconsumers.org /categories /ge-wheat> (Accessed on 11-11-12).

an Indian wheat variety. They said that Nap Hal means 'no seeds' and it cannot be an indigenous seed variety because farmers bred seed to produce seed.¹⁸⁹ The point here was that they did not literally bred the Nap Hal seeds. With this patent, Monsanto could only not control the farming and processing of these crops but also could control seed swapping, which is a common practice in India among farmers. In addition to this, Monsanto could prevent other farmers from growing the crop.

Creators can be given the right to prevent others from using their inventions, designs or other creations and to use that right to negotiate payment in return for others using them. These are 'intellectual property rights'.¹⁹⁰

The traits of low elasticity, low gluten which are being patented are not an invention, but derived from an Indian variety. "The soft wheat flour containing fewer than 3 different HMW glutenin subunits" was one of the 15 claims. Shiva said that the crossing with a soft milling variety was an obvious step to any breeder. The patent was based on piracy, not on non-obvious novelty, and hence needed to be challenged to stop legal precedence being created on false claims to invention.¹⁹¹ Shiva believed that this patent should be challenged based on this reason and many more. In October 2004, Greenpeace successfully challenged the patent claim on the basis of it being bio-piracy and the European Patent Office revoked the patent on Nap Hal.

189. Vandana Shiva, "Monsanto's Biopiracy", Available at <http://www.countercurrents.org/en-shiva270404.htm> (Accessed on 12-11-12).

190. World Trade Organization, "Intellectual property: protection and enforcement" Available at http://www.wto.org/english/thewto_e/whatis_e/tif_e/agrm7_e.htm#top (Accessed on 11-11-12).

191. Vandana Shiva, "Monsanto's Biopiracy", Available at <http://www.countercurrents.org/en-shiva270404.htm> (Accessed on 12-11-12).

Moreover, India is still fighting for Yoga related patents in USPTO. To prevent any further miss happening, India has made available a list of 1,300 newly registered yoga poses and has compiled it to prevent the ancient moves from being exploited by patent pirates.¹⁹² Hindu gurus and some 200 scientists from the Council of Scientific and Industrial Research (CSIR) compiled the list from 16 ancient texts, including the Mahabharata, the Bhagavad Gita, and Patanjali's Yoga Sutras, to prevent yoga teachers in the United States and Europe from patenting established poses as their own.¹⁹³ The database, which includes 200 video demonstrations, has been made available to international patent offices through India's Traditional Knowledge Digital Library (TKDL).¹⁹⁴

The appropriation of elements of this collective knowledge of societies into proprietary knowledge for the commercial profit of a few is one of the concerns of the developing world. An urgent action is needed to protect these fragile knowledge systems through national policies and international understanding linked to IPR, while providing its development and proper use for the benefit of its holders. What is needed is a particular focus on community knowledge and community innovation, enterprise and investment is particularly important.

The local communities or individuals do not have the knowledge or the means to safeguard their property in a system, which has its origin in very different cultural values and attitudes. The communities have a storehouse of knowledge about their flora and fauna, their habits, their habitats, their seasonal behavior and the like-and it is only logical and in consonance with natural justice that they are given a greater say as a matter of right in all

192. <http://www.richardrosenyoga.com/> (Accessed on 12-11-14).

193. *Id.*

194. A talk with V K Gupta, head, TKDL, Times of India, 5, May 2013.

matters regarding the study, extraction and commercialization of the biodiversity. Presently the problem with original holders of Traditional Knowledge is that they get no share in profits / no recognition for nurturing resources/ knowledge. Once IPR acquired, original holders cannot make commercial use of IPR-protected resources. Violation of rights of original holders over resources/ knowledge for the purposes of obtaining consent, or channelling of benefits, a major problem is to identify the “original holders” of the biological resources or related knowledge.

* * * * *

CHAPTER-III

INTERNATIONAL POSITION OF TRADITIONAL KNOWLEDGE

3.1 INTRODUCTION

Traditional Knowledge has been very important topic for discussion at International level for past many years. This is being discussed at International level at many platforms; some international agencies have been established exclusively for this purpose. As a result of which various international instruments, including agreements, UN resolutions and conference declarations have come up dealing with the different aspects of Traditional Knowledge but still there exist many unresolved issues.

Traditional Knowledge entered the international debate for a number of reasons. These encompass the call for an increased recognition of the rights of indigenous peoples, including the right to self-determination; the loss of Traditional Knowledge and the apparent need for its protection; the destruction of the environment and the reduction of biological diversity; the North-South relationship; and the effects of modern biotechnology, particularly genetic engineering, and the protection of the resulting innovations by Intellectual property Rights (IPRs). Key words frequently used in this debate are “green gold,” “biopiracy,”¹⁹⁵ “exploitation of the South,” “Farmers” Rights,”

195. There is no uniform and universally accepted definition of ‘bio-piracy’ but it includes:

“erosion of Traditional Knowledge” and “fair and equitable benefit sharing.”

The issues which are arising with reference to Traditional Knowledge are highly controversial. There are serious social, economic and scientific questions are involved which need to be answered not only at international level but also national and sub-national level. In addition to this interests of various actors is also involved which include developed and developing countries, indigenous people, scientists, private industry and Non- Governmental Organizations.

The question arises whether the current international discussions adequately take into account the holistic nature of Traditional Knowledge “*and its intrinsic value, including its social, spiritual, economic, intellectual, scientific, ecological, technological, commercial, educational and cultural value.*”¹⁹⁶ Moreover, it should also be clarified as to how the fragmentation of the efforts of the involved international fora should be addressed.

This chapter discusses about the issue of Traditional Knowledge at international level. In the beginning, important terms and concepts have been discussed which have been subject matter of great

-
- a) the acquisition of genetic resources or Traditional Knowledge without permission of their holder;
 - b) cases where benefits arising from the commercial use of genetic resources or Traditional Knowledge are not shared with the provider of these resources or this knowledge;
 - c) cases where Traditional Knowledge is protected by IPRs – primarily patents – without the holders of these rights having been innovative themselves, but having simply copied this knowledge;
 - d) any IPR-protection of biotechnological innovations, which are based on genetic resources or Traditional Knowledge, irrespective of whether the applicable conditions for (1) access to these resources or this knowledge, (2) benefit sharing, or (3) the acquisition of these IPRs have been met or not.

196. www.wipo.int/edocs/mdocs/tk/en/wipo_grtkf_ic_10/wipo_grtkf_ic_10_inf_3.doc. (Accessed on 05-05-13).

discussion and controversies at international level. Then, this chapter provides an overview of international efforts in this regard.

3.2 TERMINOLOGY

3.2.1 TRADITIONAL KNOWLEDGE

Despite the fact that traditional knowledge has been the subject matter of multiple international fora, so far, no internationally agreed definition of this term has emerged from these discussions.¹⁹⁷

Despite the lack of clear terminology, several particular characteristics can generally be attributed to this form of knowledge: Traditional knowledge consists of tradition-based innovations, creations and practices¹⁹⁸ that originate from and are used by indigenous and local communities.¹⁹⁹

197. The Secretariat of the CBD defines Traditional Knowledge as referring to the knowledge, innovations and practices of indigenous and local communities around the world, developed from experience gained over the centuries and adapted to the local culture and environment. Traditional Knowledge is transmitted orally from generation to generation. It tends to be collectively owned and takes the form of stories, songs, folklore, proverbs, cultural values, beliefs, rituals, community laws, local language, and agricultural practices, including the development of plant species and animal breeds. Traditional Knowledge is mainly of a practical nature, particularly in such fields as agriculture, fisheries, health, horticulture, and forestry. According to WIPO, Traditional Knowledge refers to tradition-based literary, artistic or scientific works; performances; inventions; scientific discoveries; designs; marks, names and symbols; undisclosed information; and all other tradition-based innovations and creations resulting from intellectual activity in the industrial, scientific, literary or artistic fields. ‘Tradition-based’ refers to knowledge systems, creations, innovations and cultural expressions which have generally been transmitted from generation to generation; are generally regarded as pertaining to a particular group of people or its territory; and, are constantly evolving in response to a changing environment. Categories of Traditional Knowledge could include: agricultural knowledge; scientific knowledge; technical knowledge; ecological knowledge; medicinal knowledge, including related medicines and remedies; biodiversity-related knowledge; expressions of folklore in the form of music, dance, song, handicrafts, designs, stories and artwork; elements of languages, such as names, geographical indications and symbols; and movable cultural properties excluded from this description of Traditional Knowledge would be items not resulting from intellectual activity in the industrial, scientific, literary or artistic fields, such as human remains, languages in general, and other similar elements of ‘heritage’ in the broad sense.” (WIPO-IGC, 2002d, paragraph 25).

198. “Traditional Knowledge is knowledge that has been developed based on the traditions of a certain community or nation. Traditional Knowledge is, for that simple reason, culturally driven.” (WIPO-IGC, 2002b, paragraph 33). “Because its generation, preservation and transmission is based on cultural traditions, Traditional Knowledge is essentially culturally

3.2.2 TRADITIONAL CULTURAL EXPRESSIONS / EXPRESSIONS OF FOLKLORE

In the international context, the cultural dimension of traditional knowledge has been discussed under the headings of “folklore.” Since the term “folklore” has been criticized as having the negative connotation of “being associated with the creations of lower or superseded civilizations,” the terms “traditional cultural expressions” and “expressions of folklore” have lately been used as synonymous in the relevant international fora instead of the term “folklore.”²⁰⁰

3.2.3 BIOLOGICAL DIVERSITY AND GENETIC RESOURCES

“Biological diversity” is defined in Article 2 of the Convention on Biological Diversity as “the variability among living organisms from all

oriented or culturally-rooted, and it is integral to the cultural identity of the social group in which it operates and is preserved.” (WIPO-IGC, 2002, paragraph 28).

199. Traditional Knowledge can also be found in Western societies such as for example “grandmother’s remedies.” Since this Traditional Knowledge has so far generally not been the subject of the international discussions on Traditional Knowledge, this paper does not address the issues that may arise with regard to this form of Traditional Knowledge.

200. The terms “traditional cultural expressions” and “expressions of folklore” can be defined as follows:

- “(a) Traditional cultural expressions” or “expressions of folklore” are any forms, whether tangible and intangible, in which traditional culture and knowledge are expressed, appear or are manifested, and comprise the following forms of expressions or combinations thereof:
 - i. verbal expressions, such as: stories, epics, legends, poetry, riddles and other narratives; words, signs, names, and symbols;
 - ii. musical expressions, such as songs and instrumental music;
 - iii. expressions by action, such as dances, plays, ceremonies, rituals and other performances, whether or not reduced to a material form; and,
 - iv. tangible expressions, such as productions of art, in particular, drawings, designs, paintings (including body-painting), carvings, sculptures, pottery, terracotta, mosaic, woodwork, metalware, jewelry, baskets, needlework, textiles, glassware, carpets, costumes; handicrafts; musical instruments; and architectural forms; which are:
 - (aa) the products of creative intellectual activity, including individual and communal creativity;
 - (bb) characteristic of a community’s cultural and social identity and cultural heritage; and
 - (cc) maintained, used or developed by such community, or by individuals having the right or responsibility to do so in accordance with the customary law and practices of that community.” (WIPO-IGC, 2005d).

sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.”²⁰¹

“Genetic resources” can be defined as genetic material – that is, any material of plant, animal, microbial or other origin containing functional units of heredity – of actual or potential value.²⁰² Plant genetic resources for food and agriculture (PGRFA), a special category of plant genetic resources, are genetic material of plant origin – that is, any material of plant origin, including reproductive and vegetative propagating material, containing functional units of heredity – of actual or potential value for food and agriculture.²⁰³

3.2.4 ACCESS AND BENEFIT SHARING

The term “access and benefit sharing” and its abbreviation “ABS” refer to the issues arising in the context of access to genetic resources and traditional knowledge and the fair and equitable sharing of the benefits arising from their use.²⁰⁴ The three principal international instruments on access and benefit sharing are (1) the Convention on Biological Diversity (Biodiversity Convention, CBD) of 1992;²⁰⁵ (2) the International Treaty on Plant Genetic Resources for Food and Agriculture (International Treaty) of the Food and Agriculture Organization (FAO) of 2001;²⁰⁶ and (3) the legally non-binding

201. Biodiversity Convention, 1992, Available at www.scidev.net/ms/biofacts/index.cfm?pageid=421#described (Accessed on 23-08-13).

202. Article 2 CBD.

203. Article 2 FAO-International Treaty.

204. Article 1 of the CBD states as one of the three objectives “the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding.” (CBD, 1992), Similarly, Article of the International Treaty of FAO states as one of the three objectives the fair and equitable sharing of the benefits arising out of the use of PGRFA.

205. biodiversity.org (Accessed on 03-09-13).

206. fao.org (Accessed on 03-09-13).

Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising Out of Their Utilization (Bonn Guidelines) of 2002. In the realm of the CBD, negotiations on an International Regime on Access and Benefit Sharing began in February 2005.

3.2.5 BIOPIRACY

In the discussions on access and benefit sharing and intellectual property, a catchword frequently referred to is “bio-piracy.”²⁰⁷ This term is used – without uniformity – to describe a variety of circumstances, including:

- the acquisition of genetic resources or traditional knowledge without permission of their holder;
- cases where benefits arising from the commercial use of genetic resources or traditional knowledge are not shared with the provider of these resources or this knowledge;
- cases where traditional knowledge is protected by IPRs – primarily patents – without the holders of these rights having been innovative themselves, but having simply copied this knowledge;
- any IPR-protection of biotechnological innovations, which are based on genetic resources or traditional knowledge, irrespective of whether the applicable conditions for (1) access to these resources or this

207. Another term used in this context is “misappropriation.” This term can be defined as: “Any acquisition, appropriation or utilization of Traditional Knowledge by unfair or illicit means constitutes an act of misappropriation. Misappropriation may also include deriving commercial benefit from the acquisition, appropriation or utilization of Traditional Knowledge when the person using that knowledge knows, or is negligent in failing to know, that it was acquired or appropriated by unfair means; and other commercial activities contrary to honest practices that gain inequitable benefit from Traditional Knowledge.” (WIPO-IGC, 2005b, Annex, p. 12, Article 2, paragraph 2). “The non-exclusive nature of this description of “misappropriation” allows the term “misappropriation” to become the umbrella term and structure under which the various unfair, illicit and inequitable acts, which should be repressed, may be subsumed”.

knowledge, (2) benefit sharing, or (3) the acquisition of these IPRs have been met or not.

3.3 INTERNATIONAL DEBATE ON TRADITIONAL KNOWLEDGE

Despite the fact that Traditional Knowledge has been the subject matter of multiple international fora, so far, no internationally agreed definition of this term has emerged from these discussions.²⁰⁸

Issues such as human rights, self-determination, access to and use of natural resources, the destruction of the environment, ownership of land, racial and ethnic discrimination of minorities, self-governance, sustainable economic development, the loss of languages and dialects,²⁰⁹ adequate housing and access to health care, are of great importance to indigenous peoples. Since in a globally interrelated environment, these issues cannot be resolved at the sub-national or national levels alone, they naturally entered the international debate.²¹⁰ This resulted in the establishment of new bodies²¹¹ and funds,²¹² the adoption of declarations,²¹³ and the inclusion of provisions in

208. The Secretariat of the CBD defines Traditional Knowledge as referring “to the knowledge, innovations and practices of indigenous and local communities around the world. Developed from experience gained over the centuries and adapted to the local culture and environment, Traditional Knowledge is transmitted orally from generation to generation. It tends to be collectively owned and takes the form of stories, songs, folklore, proverbs, cultural values, beliefs, rituals, community laws, local language, and agricultural practices, including the development of plant species and animal breeds. Traditional Knowledge is mainly of a practical nature, particularly in such fields as agriculture, fisheries, health, horticulture, and forestry.” www.biodiv.org/programmes/socio-eco/traditional/default.asp (Accessed on 11-11-13).

209. www.ncela.gwu.edu/pubs/stabilize/ii-policy/, (Accessed on 05-05-13).

210. www.unhchr.ch/indigenous/decade.htm and www.ohchr.org/english/issues/indigenous/decade.htm, (Accessed on 11 -08- 2013).

211. www.un.org/esa/socdev/unpfii/, (Accessed on 11 -08- 13).

212. www.unhchr.ch/htmlmenu2/9/vfindige.htm. (Accessed on 11 -08- 13).

213. e.g., paragraph 19 of the Doha Declaration.

international agreements;²¹⁴ other efforts with regard to these issues have not been concluded to date.²¹⁵

One issue of particular concern to indigenous and local communities is Traditional Knowledge. Different aspects of this issue have been dealt with by numerous international fora, including WIPO's Intergovernmental Committee, the Working Group on Article 8(j) of the CBD, the TRIPS Council, and various other UN fora including the UN Permanent Forum on Indigenous Issues. A number of questions have remained nevertheless unresolved, in particular:

- Why is Traditional Knowledge of such importance to indigenous and local communities?
- Why does this knowledge have to be protected and what are the policy objectives of this protection?
- Why has this issue been at the forefront of the international discussions on indigenous issues?

While addressing these questions, the following developments and factors need to be considered.

Over the centuries, indigenous and local communities all over the world have created a great deal of Traditional Knowledge. Access to, use and handing down of this knowledge has been regulated by local values, customs, traditions and laws. Some of this knowledge has been known only to particular individuals within a community, for example the community's shaman²¹⁶, and has been handed down only

214. www.unhchr.ch/htmlmenu3/b/62.htm. (Accessed on 11 -08- 13), and Articles 8(j) of the CBD and 9.2(a) of the FAO's International Treaty.

215. www.ohchr.org/english/issues/indigenous/declaration.htm, (Accessed on 11 -08- 13).

216. A person regarded as having access to, and influence in, the world of good and evil spirits, especially among some peoples of northern Asia and North America. Typically such people enter a trance state during a ritual, and practise divination and healing.

to particular individuals of the next generation; other Traditional Knowledge has been accessible by all members of a community and freely exchanged with outsiders.²¹⁷

Traditional Knowledge is being lost at an accelerating rate. The causes for this loss are manifold and include the destruction of the environment, the disappearance of the holders of Traditional Knowledge, that is, indigenous and local communities, and the vanishing of their local languages and dialects, the lack of interest in the continued use of Traditional Knowledge and its replacement by Western forms of knowledge.²¹⁸

Outside indigenous and local communities, interest in and use of Traditional Knowledge was for a long time generally limited. Recently, however, Western scientists and industry have increasingly become interested in this knowledge.²¹⁹ This interest increased for a variety of reasons, including the following: Advances made in modern biotechnology, especially in genetic engineering, have considerably increased the possibilities for using genetic resources. Furthermore, consumer demand for medicines and foodstuffs based on natural substances has also increased interest in genetic resources. In turn, this also increased interest in the Traditional Knowledge related to genetic resources, which may be the starting point for research and development activities of scientists and industry in fields such as cosmetics and fragrance production, pharmacology, plant breeding, and foodstuff production.²²⁰ For instance, the knowledge of a local

217. <https://www.cbd.int/abs/infokit/all-files-en.pdf> (Accessed on 11 -08- 13).

218. www.globalissues.org › Issues › Articles (Accessed on 11 -08- 13).

219. www.wipo.int/edocs/mdocs/tk/en/.../wipo_unhchr_ip_pnl_98_4.doc, (Accessed on 11 -08- 13).

220. *Id.*

healer on the pharmaceutical properties of a particular plant may help in the development of a new drug that is based on extracts of that plant. Moreover, scientists have increasingly become interested in Traditional Knowledge on agriculture, including for example Traditional Knowledge on crop protection. And finally, Traditional Knowledge on the management of natural resources such as the management of fish and water harvesting techniques may be of interest when taking measures, among others, to conserve the environment or for sustainable development.

This use of Traditional Knowledge by scientists and industry takes place outside the indigenous and local communities that hold this knowledge, and thus outside the scope of application of the local values, customs, traditions and laws, regulating access to, use and handing down of Traditional Knowledge.²²¹ This raises complex issues, including the following: Do researchers need permission for using Traditional Knowledge and, if so, from whom? In case a product can eventually be marketed successfully, must the commercial benefits arising be shared, and if so, with whom? And finally, may this knowledge be freely included in scientific publications and be made available to other researchers?

Frequently, scientists and industry from outside the borders of the countries where these indigenous communities are located use Traditional Knowledge. It is also of importance in this context that the large majority of plants, animals and micro-organisms can be found in the tropical and sub-tropical regions of the World, whereas the North is

221. www.humanrights.ch/.../050829_tradKnowledge_Girsberger_jusletter20 (Accessed on 11 - 08- 13).

relatively poor with biological diversity Accordingly, the issues arising acquire not only an international, but also a North -South-dimension.²²²

One particular concern raised in the context of the use of Traditional Knowledge in research and development activities is the misappropriation of this knowledge, sometimes also called “bio-piracy.”²²³ Cases have become public where Traditional Knowledge has been protected by IPRs, even though no innovative or creative activities have been carried out with regard to this knowledge.²²⁴

These developments and other factors have led to the international call for the protection of Traditional Knowledge. Various international fora are currently discussing the many issues arising in this regard. Now, international efforts in this regard will be discussed.

3.4 INTERNATIONAL EFFORTS

From an environmental and conservationist perspective, it is addressed by the CBD, its Working Group on Article 8(j) and the Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of Their Utilization (Bonn Guidelines) as well as FAO’s International Treaty. From an IPR and trade perspective, it is addressed by the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (IGC) of WIPO, the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement) and the TRIPS Council of the WTO. The following briefly summarizes the main

222. www.fao.org/docrep/x4945e/x4945e02.htm - 116k-, (Accessed on 05-05-13).

223. *Id.*

224. Dr. Martin Girsberger, “Traditional Knowledge and Intellectual Property Rights The Current State of Play at the International Level”, Jusletter, January 2004, p.26.

activities of these international fora with regard to Traditional Knowledge:²²⁵

3.4.1 THE PARIS CONVENTION FOR THE PROTECTION OF INDUSTRIAL PROPERTY

The Paris Convention for the protection of industrial property covers property rights for patents, utility models, industrial designs, service marks, indications of source or appellations of origin and trademark. The convention, which has more than 100 members, was adapted in 1883.

Article 1 of the convention defines scope of industrial property. It states in **Para 3** that “industrial property shall be understood in broadest sense and shall apply not only to industry and commerce proper , but likewise to agricultural and extractive industries and to all manufactured or natural products, for example ,wines, grain, tobacco leaf, fruit, cattle, minerals,...beef, flowers, and flour.”

Article 2 sets conditions for national treatment-each contracting party to the convention must grant the same intellectual property protection to nationals of other parties that give to its own nationals. Article5 (A) of the convention allows parties to pass legislation that would grant compulsory licenses in order to prevent abuses resulting from the exercise of exclusive rights.

It is possible for innovations of indigenous and local people to be protected under the trademark, utility models, industrial designs, service marks, and indications of source or appellations of origin provisions of Paris convention.

225. www.wipo.int/edocs/mdocs/tk/en/wipo_grtkf_ic_12/wipo_grtkf_ic_12_8_b.doc, (Accessed on 05-05-13).

Article 7 of the convention, in this respect, is worthy nothing. It allows member countries to “accept for filing and to protect collective marks belonging to associations do not possess an industrial or commercial establishment.” If indigenous and local people form associations that are legally legitimate in their countries, it is possible for them as a collectively to acquire service marks.

3.4.2 CONVENTION ON BIOLOGICAL DIVERSITY

The CBD entered into force December 29, 1993, and currently has 197 Contracting Parties.²²⁶ According to **Article 1**, the three objectives of the CBD are:

- a) the conservation of biological diversity,
- b) the sustainable use of its components and
- c) the fair and equitable sharing of the benefits arising out of the utilization of genetic resources.

The CBD covers genetic resources of plant, animal and microbial origin, as well as “*knowledge, innovations and practices of indigenous and local communities [...] relevant for the conservation and sustainable use of biological diversity.*”²²⁷

Access and benefit sharing regarding genetic resources, regulated in Article 15, is based on a bilateral approach, that is, according to mutually agreed terms between the provider and the user of these resources.²²⁸ Furthermore, access to genetic resources shall be subject to the prior informed consent of the Contracting Party providing these resources.²²⁹ With regard to Traditional Knowledge, the CBD requires

226. www.biodiv.org/world/parties.asp (last visited 24-12-13).

227. Article 8(j) CBD.

228. Articles 15.4 and 15.7 CBO.

229. Article 15.5 CBD.

that the application of this knowledge occurs with the approval and involvement of its holders.²³⁰

Among several CBD-bodies, three are of particular importance with regard to access and benefit sharing and Traditional Knowledge.²³¹ These are:

- a) The Conference of the Parties (COP);
- b) The Ad Hoc Open-ended Working Group on Access and Benefit- Sharing (Working Group on ABS); and
- c) The Ad Hoc Open-ended Working Group on Article 8(j) (Working Group on Article 8(j)).²³²

For spelling out the general provisions of CBD and to assist the contracting parties in the implementation of their obligations at national level, Bonn Guidelines were adapted in April, 2002. Even though the provisions of these guidelines deal primarily with genetic resources, they also cover Traditional Knowledge associated with genetic resources.²³³

The seventh meeting of the CBD-COP (COP), held in February 2004,²³⁴ decided to mandate the Working Group on ABS to “*elaborate and negotiate an international regime on access to genetic resources and benefit-sharing with the aim of adopting an instrument/instruments*

230. Article 8(i) of the CBD requires Contracting 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 their 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.

231. <http://www.biodiv.org/convention/cops.asp>(Accessed on 11-11-13).

232. This working Group was established by COP-4 in 1998.

233. Para. 9 of the Bonn Guidelines. Provisions dealing with Traditional Knowledge are paragraphs 11(ii), 16(c)(i), 31, 37 and 44(g). With regard to IPRs, paragraph 16(d)(ii) is of particular importance, as it deals with measures to encourage the disclosure of the origin of Traditional Knowledge in applications for IPRs.

234. www.biodiv.org/doc/meeting.aspx?mtg=COP-07, (Accessed on 12-12-13).

to effectively implement the provisions in Article 75 and Article 8j of the Convention and the three objectives of the Convention.²³⁵ According to the terms of reference for this working group, the scope of the international regime is to include “*Traditional Knowledge, innovations and practices in accordance with Article 8(j).*”²³⁶ The first round of negotiations on the international regime was held at the third meeting of the Working Group on ABS in February 2005,²³⁷

The Working Group on Article 8(j) addressed, among other issues, *sui generis* systems “for the protection of Traditional Knowledge.

Article 8 (j): State Parties required 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: Contracting Parties should “encourage and develop models of cooperation for the development and use of technologies, including traditional & indigenous technologies.”

3.4.2.1 THE 8(J) WORKING GROUP

At the Seventh Conference of the Parties (COP7), the Parties clarified previous decisions and held that the most appropriate means of

235. www.energyandenvironment.undp.org/undp/indexAction.cfm?module=Library&action=GetFile&DocumentAttachmentID=2270 ,(Accessed on 08-11-13)

236. www.cbd.int/doc/meetings/tk/wg8j-05/official/wg8j-05-04-en.doc .,(Accessed on 08-11-13)

237. The first round of negotiations on the international regime was held at the third meeting of the Working Group on ABS in February 2005.

protecting indigenous knowledge is “based on a combination of appropriate approaches... including the use of existing intellectual property mechanisms, *sui generis* systems, customary law, the use of contractual arrangements, registers of Traditional Knowledge, and guidelines and codes of practice” (CBD COP Decision VI/10A, para. 33.) More particularly, the 8(j) Working Group has a working draft of potential components of a *sui generis* system for the protection of indigenous knowledge which include (among other items):

- a) Clarity with regard to ownership of Traditional Knowledge associated with biological and genetic resources.
- b) Recognition of elements of customary law relevant to the conservation and sustainable use of biological diversity with respect to: (i) customary rights in indigenous/traditional/local knowledge; (ii) customary rights regarding biological resources; and (iii) customary procedures governing access to and consent to use Traditional Knowledge, biological and genetic resources.
- c) A process and set of requirements governing prior informed consent, mutually agreed terms and equitable sharing of benefits with respect to Traditional Knowledge, innovations and practices associated with genetic resources and relevant for the conservation and sustainable use of biological diversity.
- d) Provisions regarding enforcement and remedies.
- e) Relationship to other laws, including international law.
- f) Extra-territorial protections.

The potential components mark a critical advancement in the work of the 8(j) Working Group, particularly its concrete inclusion of the role of indigenous Customary Law in protecting Indigenous

knowledge. With regard to *sui generis* protection of TK, the 8(j) Working Group has been mandated to: 1) consider non-intellectual-property-based *sui generis* forms of protection of Indigenous knowledge; 2) further develop, as a priority issue, elements for *sui generis* systems for Indigenous knowledge protection, 3) review and make recommendations regarding the international regime on access and benefit-sharing with a view to including *sui generis* systems and measures for the protection of Indigenous knowledge; and 4) explore, taking into account the work of the IGC, the potential of and conditions under which the use of existing as well as new forms of intellectual property.

The International Indigenous Forum on Bio-Diversity (IIFB) is an organization of Indigenous representatives from around the world that have been participating in CBD process. The IIFB has a network to discuss issues between meetings and holds separate two day meetings prior to CBD meetings to formulate Indigenous strategies and positions. The IIFB also sits at the CBD as an “indigenous” block with a status separate from Parties (Nations states) and NGOs. The IIFB also holds in camera meetings during CBD meetings to formulate positions and statements during the ongoing discussions.

3.4.2.2 THE ABS WORKING GROUP

Without going extensively into the background of the ABS Working Group, a brief introduction regarding Indigenous knowledge protection is being discussed. Between the Sixth and Seventh Session of the Conference of the Parties²³⁸, there has been a substantive and, generally, successful movement to commence discussion and negotiation of an international regime

238. From 2002 to 2004.

on Access and Benefit Sharing on Genetic Resources and Associated Traditional Knowledge. This was a remarkable and unprecedented move from voluntary Guidelines (i.e., the Bonn Guidelines-discussed next) to an international treaty discussion in a two-year period at the international level. The ABS Working Group developed *The Bonn Guidelines* that were enacted by COP in 2002 to regulate parties' treatment biological resources and TK. The voluntary guidelines make several references to Indigenous peoples and TK including:

General Provision 16: Contracting Parties... in accordance to the Convention should- **(a) (vi)** Establish mechanisms to ensure that their decisions are made available to relevant indigenous and local communities and relevant stakeholders, particularly Indigenous and local communities. **(b) (ii)** Respect customs, traditions, values and customary practices of indigenous and local communities. **(iii)** Respond to requests for information from indigenous and local communities.

Steps in the ABS Process: Competent authority granting prior and informed consent (31²³⁹) Respecting established legal rights of indigenous and local communities associated with the genetic resources being accessed or where Traditional Knowledge associated with genetic resources is being accessed, the prior and informed consent of indigenous and local communities and the approval and involvement of the holders of Traditional Knowledge, innovations and practices should be obtained, in accordance with their traditional practices.....²⁴⁰

Recently, the Conference of the Parties to the Convention on Biological

239. 31COP 6 Decision VI/24.

240. Inter-Agency Support Group on Indigenous Peoples' Issues, Thematic Paper on the "Knowledge of Indigenous Peoples and Policies for Sustainable Development: updates and trends in the Second Decade of the World's Indigenous People", Available at <http://www.un.org/> (Accessed on 12-11-14).

Diversity held its twelfth meeting in Pyeongchang, Republic of Korea, from 6 to 17 October 2014.²⁴¹ Under the theme, “Biodiversity for Sustainable Development,” thousands of representatives of governments, NGOs, indigenous peoples, scientists and the private sector gathered in Pyeongchang, Republic of Korea for the 12th meeting of the Conference of the Parties to the Convention on Biological Diversity. From October 6–17, 2014, parties²⁴² united and held various meetings frequently to discuss about the implementation of the Strategic Plan for Biodiversity 2011-2020 and its Aichi Biodiversity Targets²⁴³,

241. <http://www.cbd.int/doc/press/2014/pr-2014-10-06-cop-12-en.pdf> (Accessed on 12-11-14)

242. Presently there are 196 parties.

243. The Aichi Biodiversity Targets are as follows:

- By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.
- By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.
- By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions.
- By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.
- By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.
- By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.
- By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.
- By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity
- By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.

which are to be achieved by the end of this decade. The results of Global Biodiversity Outlook 4, the flagship assessment report of the CBD informed the discussions.

The conference gave a mid-term evaluation to the UN Decade on

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- By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.
 - By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscape and seascapes.
 - By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.
 - By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.
 - By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and wellbeing, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.
 - By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.
 - By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.
 - By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.
 - By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.
 - By 2020, knowledge, the science base and technologies relating to biodiversity, its values functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.
 - By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan 2011-2020 from all sources and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization should increase substantially from the current levels. This target will be subject to changes contingent to resources needs assessments to be developed and reported by Parties.

Biodiversity (2011-2020) initiative, which aims to promote the conservation and sustainable use of nature. At the end of the meeting, participants adopted the "Pyeongchang Road Map," which addresses ways to achieve biodiversity through technology cooperation, funding and strengthening the capacity of developing countries.

Although the convention explicitly states that all forms of life are covered by its provisions,²⁴⁴ examination of reports and of national biodiversity strategies and action plans submitted by participating countries shows that in practice this is not happening. The fifth report of the European Union, for example, makes frequent reference to animals (particularly fish) and plants, but does not mention bacteria, fungi or protists²⁴⁵ at all.²⁴⁶ The International Society for Fungal Conservation has assessed more than 100 of these CBD documents for their coverage of fungi using defined criteria to place each in one of six categories. No documents were assessed as good or adequate, less than 10% as nearly adequate or poor, and the rest as deficient, seriously deficient or totally deficient.²⁴⁷

3.4.2.3 THE BONN GUIDELINES

Although the CBD was adopted in 1992 and entered into force at the end of 1993, the operationalization and thus the implementation of

244. www.cbd.int (Accessed on 07-11-14)

245. Protist-Any of numerous eukaryotic organisms that are not fungi, plants, or animals and are chiefly unicellular or colonial. Protists that are multicellular do not have cells differentiated into tissues. The protists include the protozoans, certain algae, oomycetes, and slime molds. Available at <http://www.thefreedictionary.com/protist> (Accessed on 14-10-14).

246. Fifth Report of the European Union to the Convention on Biological Diversity, June 2014, Available at www.cbd.int. (Accessed on 18-09-14).

247. www.fungal-conservation.org (Accessed on 07-11-14).

provisions related to ABS was slow.²⁴⁸ Starting with the Philippines in 1995 selected provider countries started enacting ABS legislation. But as their approaches to access were mainly restrictive and thus contrary to the CBD objective of facilitating ABS, the Conference of the Party to the CBD (COP) 5 (2000) established the Ad Hoc Open-ended Working Group on ABS with the mandate to develop guidelines.²⁴⁹ The result is the Bonn Guidelines, adopted unanimously by some 180 countries.²⁵⁰

The Bonn Guidelines are of voluntary nature and according to I.A.1. *‘may serve as inputs when developing and drafting legislative, administrative or policy measures under Articles 8(j), 10(c), 15, 16 and 19 CBD; and contracts and other arrangements under MAT for ABS.’* The Guidelines identify the steps in the ABS process, with an emphasis on the obligation for users to seek PIC of providers. They also identify the basic requirements for MAT and define the main roles and responsibilities of users and providers.²⁵¹

With regard to PIC, the Bonn Guidelines distinguish between ILC associated with the genetic resources being accessed and TK associated with the genetic resources being accessed. In both cases PIC of ILC and in the latter also the approval and involvement of the holders of TK should be obtained in respect of established legal rights (paragraph 31).

Furthermore the Guidelines listed below introduce a proposed list

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- 248. Nijar, “The Nagoya Protocol on Access and Benefit Sharing of Genetic Resources: Analysis and Implementation Options for Developing Countries” Available at <https://books.google.co.in/books?isbn=1135135487> (Accessed on 12-06-12).
 - 249. Kamau, Fedder & Winter, "The Nagoya Protocol on Access to Genetic Resources and Benefit Sharing: What is New and what are the Implications for Provider and User Countries and the Scientific Community?" at 248, Available at www.lead-journal.org/content/10246.pdf (Accessed on 12-06-12).
 - 250. Bonn Guidelines, Introduction , Available at <https://www.cbd.int/doc/publications/cbd-bonn-gdls-en.pdf> (Accessed on 12-06-12).
 - 251. Article 1 Objectives, CBD.

of elements that could be considered as guiding parameters in contractual agreements as well as basic requirements for MAT particularly with regard to ILC and TK (paragraph 43):

- a) Regulating the use of resources in order to take into account ethical concerns of the particular parties and stakeholders, in particular ILC concerned;
- b) Making provision to ensure the continued customary use of genetic resources and related knowledge;
- c) Provision for the use of intellectual property rights include joint research, obligation to implement rights on inventions obtained and to provide licences by common consent;
- d) The possibility of joint ownership of intellectual property rights according to the degree of contribution.

Finally, the Bonn Guidelines state that, “benefits should be shared fairly and equitably with all those who have been identified as having contributed to the resource management, scientific and/or commercial process. The latter may include governmental, non-governmental or academic institutions and ILC...”²⁵² Besides the voluntary nature of the Guidelines representatives of indigenous people have especially criticized that they do not distinguish between their role and any other stakeholder who might be involved in resource management. As a result their participation in ABS is not a question of rights enforcement but rather a question of national recognition of ILC rights.²⁵³

In addition guidelines have been criticized for focusing too much

252. Paragraph 48.

253. Dross, M. and Wolff, F., “New Elements of the International Regime on Access and Benefit-Sharing of Genetic Resources – the Role of Certificates of Origin”, Federal Agency for Nature Conservation, Germany, 2005.

on the access side and thus on provider country measures as opposed to user country measures.²⁵⁴ Whereas access and the agreement to share benefits take place in the country providing the genetic resources, the actual utilization of the genetic resources and thus the benefits triggering moment usually happens in another jurisdiction – the one of the user countries. The need for user-country measures has therefore been stressed in order to ensure compliance with domestic ABS legislation of the provider country and to monitor the utilization of genetic resources and associated TK to enforce benefit-sharing agreements.²⁵⁵

3.4.2.4 THE NAGOYA PROTOCOL

The Nagoya Protocol addresses Traditional Knowledge associated with genetic resources with provisions on access, benefit-sharing and compliance. It also addresses genetic resources where indigenous and local communities have the established right to grant access to them. Contracting Parties are to take measures to ensure these communities' prior informed consent, and fair and equitable benefit-sharing, keeping in mind community laws and procedures as well as customary use and exchange.

The preamble first repeats some of the preambular paragraphs of the CBD and clarifies the importance of ABS for conservation further when stating that:

“economic value of ecosystems and biodiversity and the fair and equitable sharing of this economic value with the custodians of biodiversity are key incentives for the conservation of biological diversity and the sustainable use

254. *Id.*

255. Cabrera Medaglia, The Political Economy of the International ABS Regime Negotiations: Options and Synergies with Relevant IPR Instruments and Processes.

of its components.”

Furthermore the preamble refers to some of the difficulties in implementation of the CBD so far, thereby namely recognizing the importance of promoting equity and fairness in negotiations of MAT between providers and users of genetic resources. The last seven points are concerned with TK highlighting amongst others Article 8(j) CBD, the importance of TK for the conservation of biological diversity²⁵⁶, the diversity of circumstances in which TK associated with genetic resources is held or owned by ILC and their right to identify the rightful holder of their TK. In addition and for the first time in an international treaty, the preamble refers to the UN Declaration on the Rights of Indigenous People (UNDRIP) adopted in 2007.²⁵⁷

Starting with the provisions on benefit sharing before moving on to the regulation of access the Protocol clearly separates the two. Furthermore, Article 5 NP (Fair and Equitable Benefit-Sharing) also clearly distinguishes between benefits arising from the utilization of genetic resources, benefits that are arising from genetic resources that are held by ILC and benefits arising from the utilization of TK associated with genetic resources:

256. “Biological diversity” is defined in Article 2 of the Convention on Biological Diversity as meaning “the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.”

257. After the Canadian government initially blocked reference to the UNDRIP, Canada only accepted to include in the preamble: “Noting the United Nations Declaration on the Rights of Indigenous Peoples” after widespread international criticism. (Native Women of Quebec).

“Each party shall take legislative, administrative or policy measures, as appropriate, with the aim of ensuring that Benefits arising from the utilization of genetic resources as well as subsequent applications and commercialization shall be shared in a fair and equitable way with the party providing such resources that is the country of origin of such resources or a Party that has acquired the genetic resources in accordance with the Convention

Benefits arising from the utilization of genetic resources that are held by [ILC], in accordance with domestic legislation regarding the established rights of these [ILC] over these genetic resources, are shared in a fair and equitable way with the communities concerned.

...Benefits arising from the utilization of Traditional Knowledge associated with genetic resources are shared in a fair and equitable way with [ILC] holding such knowledge”.

In accordance with the CBD all such sharing shall be upon MAT and benefits may include monetary and non-monetary benefits, including but not limited to those listed in the Annex of the Protocol, which mainly reiterates the list of the Bonn Guidelines. In the following the Protocol also deals separately with access to genetic resources in Article 6 and access to TK associated with genetic resources in Article 7.

Article 6 reiterates that, under reaffirmation of sovereign rights over natural resources, access to genetic resources for their utilization is

subject to PIC of the providing party. With regard to previous implementation efforts the Protocol is very elaborate on the procedural facilitation of access (Article 6.3 NP).²⁵⁸ At this point it should be highlighted that Article 6.3(e) requires each Party to provide for the issuance at the time of access of a permit or its equivalent as evidence of the decision to grant PIC and of the establishment of MAT, and to notify the ABS Clearing-House (established by Article 14 NP) accordingly.

Article 6.2 requires each Party to take measures that the PIC or approval and involvement of ILC is obtained for access to genetic resources where they have established right to grant access to such resources. Article 7 NP only consists of one paragraph and states that, *“in accordance with domestic law, each Party shall take measures, as appropriate, with the aim of ensuring that TK associated with genetic resources that is held by ILC is accessed with the prior and informed consent or approval and involvement of these ILC, and that MAT have been established.”*

Utilization of genetic resources is defined as “research and development on the genetic and/or biochemical composition of genetic resources, including through the application of biotechnology as defined in Article 2(c) of the Convention”. Whereas the CBD defined genetic resources as genetic material of actual or potential value (Article 2 CBD) the term utilization of genetic resources has not been defined before and experts and national legislations offered different interpretations on the types of activities covered by the term. The new definition thus aims at creating more legal certainty by including biochemical compositions under the scope of ABS. According to

258. Kamau, Fedder & Winter, "The Nagoya Protocol on Access to Genetic Resources and Benefit Sharing: What is New and what are the Implications for Provider and User Countries and the Scientific Community?", *Environment and Development Journal* (2010), p.250, available at <http://www.lead-journal.org/content/10246.pdf> (Accessed on 17-05-11).

Kamau, Fedder & Winter this is of high importance since for example drugs based on the extraction of chemicals from biological resources are now subject to benefit sharing. The NP also contains a definition of “derivative” which was also a central concern of developing countries, but the implications of this incorporation are not clear.²⁵⁹

According to Article 3 the NP shall apply to genetic resources within the scope of Article 15 CBD, to the benefits arising out of the utilization of such resources, to TK associated with genetic resources within the scope of the CBD and to the benefits arising from the utilization of such knowledge. The provision was one of the most critical points in the negotiations. Developing countries wanted the NP to apply to existing collections of genetic resources and thus to genetic material accessed prior the adoption of the NP and prior to the adoption of the CBD. But industrialized countries (mainly the European Union) argued that this would go against legal clarity and certainty and eventually they succeeded with the reference to the scope of the CBD.²⁶⁰

However, it is being argued that the provision does not imply that benefit sharing only relates to benefits from genetic resources and TK accessed post-CBD or even post-NP. Drawing on general principles of international law the position is that new benefits arising from prior or ongoing uses may be considered as new situations for benefit-sharing

259. Dr. Konstantia Koutouki* & Katharina Rogalla von Bieberstein, “The Nagoya Protocol: Sustainable Access And Benefits-Sharing For Indigenous And Local Communities”, Duesseldorf, Germany, 2009, Available at <http://vjel.vermontlaw.edu/files/2013/06/The-Nagoya-Protocol.pdf> (Accessed on 11-11-11).

260. Kamau, Fedder & Winter, “The Nagoya Protocol on Access to Genetic Resources and Benefit Sharing: What is New and what are the Implications for Provider and User Countries and the Scientific Community?”; Krystyna Swiderska; Nijar, *The Nagoya Protocol on Access and Benefit Sharing of Genetic Resources: Analysis and Implementation Options for Developing Countries*.

requirements and thus that the NP would be applicable.²⁶¹ In addition, the NP, as a way to bridge the different positions on temporal scope, refers to a Global Multilateral Benefit Sharing Mechanism which shall deal with situations where PIC from provider countries cannot be obtained (Article 10 NP). This mechanism could potentially cover collections made before the protocol is implemented.²⁶²

A. MULTILATERAL BENEFIT-SHARING MECHANISM IN THE NAGOYA PROTOCOL

According to Article 10 NP (Global Multilateral Benefit-Sharing Mechanism), *“Parties shall consider the need for and modalities of a global multilateral benefit-sharing mechanism to address the fair and*

261. Kamau, Fedder & Winter, "The Nagoya Protocol on Access to Genetic Resources and Benefit Sharing: What is New and what are the Implications for Provider and User Countries and the Scientific Community?" , Law, Environment and Development Journal, 2010,p. 255;

Union for Ethical BioTrade- The Union for Ethical BioTrade (UEBT) is a nonprofit association that promotes the "Sourcing with Respect" of ingredients that come from biodiversity. Members commit to gradually ensuring that their sourcing practices promote the conservation of biodiversity, respect traditional knowledge and assure the equitable sharing of benefits all along the supply chain, following the Ethical BioTrade Standard. Members also commit to the UEBT verification system, which includes undergoing independent third party verification against the Ethical BioTrade Standard, developing a work-plan for gradual compliance for all natural, as well as the commitment to continuous improvement once compliance is achieved. It has a general Assembly. The General Assembly acts as the main governing body of UEBT and meets once a year to elect the Members of the Board. The General Assembly is composed of all UEBT Members. Provisional, Trading and Affiliate Members have the right to vote and elect the Board of Directors, thereby approving the management of the organization. UNCTAD, the CBD and the International Finance Corporation act as observers to the Board. To support the functioning of UEBT, the Board has appointed various committees, including an appeals committee, a membership committee, and a standards committee. The Union for Ethical BioTrade has several types of trading members: brands, producers and processing companies, mainly in the global cosmetics, pharmaceutical and food sector. Current UEBT trading members include Natura, Weleda, Laboratoires Expanscience and Aroma Forest. UEBT also has affiliate members, which currently include the International Finance Corporation (IFC), MEB - Movimento Empresarial Brasileiro pela Biodiversidade, PhytoTrade Africa and Rongead.

262. Dr. Konstantia Koutouki* & Katharina Rogalla von Bieberstein, "The Nagoya Protocol: Sustainable Access And Benefits-Sharing For Indigenous And Local Communities", *Duesseldorf, Germany*, 2009, Available at <http://vjel.vermontlaw.edu/files/2013/06/The-Nagoya-Protocol.pdf> (Accessed on 11-11-11).

equitable sharing of benefits derived from the utilization of genetic resources and [TK] associated with genetic resources that occur in transboundary situations or of which it is not possible to grant or obtain [PIC]. The benefits... through this mechanism shall be used to support the conservation of biological diversity and the sustainable use of its components globally.” The establishment of a multilateral benefit-sharing fund has already been proposed by the Africa Group.²⁶³ The wording “not possible to grant or obtain [PIC]” is broad and could thus cover genetic resources or associated TK which origin is not clear or that were obtained prior to the entering into force of the NP and the CBD, for instance for ex situ collections. The fund thus provides a potential means of addressing developing country concerns over the temporal scope.²⁶⁴

Next to a global benefit-sharing mechanism the NP also encourages regional cooperation. Article 11 NP (*Transboundary Cooperation*) foresees cooperation between Parties and involvement of ILC concerned if the same genetic resources are found in-situ within the territory of more than one Party or where the same TK is shared by one or more ILC in several Parties. In their assessment Kamau, Fedder and Winter come to the conclusion that Article 10 and 11 NP constitute “*a kind of, though weak, derogation of absolute state sovereignty*” and draw the comparison with the multilateral ABS of the International Treaty on Plant Genetic Resources for Food and Agriculture

263 http://cisdl.org/public/docs/news/Koutouki_and_Von_BiebersteinTHE_NAGOYA_PROTOCOL_STATUS_OF_INDIGENOUS_AND_LOCAL_COMMUNITIES.pdf ,(Accessed on 11-11-12).

264. Kamau, Fedder & Winter, "The Nagoya Protocol on Access to Genetic Resources and Benefit Sharing: What is New and what are the Implications for Provider and User Countries and the Scientific Community?" Available at www.lead-journal.org/content/10246.pdf (Accessed on 11-11-11).

(ITPGRFA).²⁶⁵

And the Union for Ethical BioTrade observes that “*in the [NP], the need to share the benefits derived from the use of genetic resources appears to have been detached from access to these resources. Fair and equitable sharing of benefits must still take place on the basis of [MAT], but it is not clear that benefit sharing requires, or only takes place ensuing, access procedures*”²⁶⁶.

B. USER-COUNTRY MEASURES IN THE NAGOYA PROTOCOL

According to Article 15 NP (*Compliance with Domestic Legislation or Regulatory Requirements on Access and Benefit-Sharing*) each Party shall take measures to provide that genetic resources, utilized within its jurisdiction have been accessed in accordance with PIC and that MAT have been established, “*as required by the domestic [ABS] legislation or regulatory requirements of the other Party*”. In addition Parties shall take measures to address situations of non-compliance and cooperate in cases of alleged violation of domestic ABS legislation or regulatory requirements.

Article 16 NP (*Compliance with Domestic Legislation or Regulatory Requirements on Access and Benefit-Sharing for Traditional Knowledge Associated with Genetic Resources*) restates the use of TK associated with genetic resources. Although Article 15.7 CBD requires each contracting Party to ensure fair and equitable benefit-sharing and thus also addresses user countries, it is for the first time that compliance measures to be implemented by user-countries are explicitly addressed

265. Kamau, Fedder & Winter, "The Nagoya Protocol on Access to Genetic Resources and Benefit Sharing: What is New and what are the Implications for Provider and User Countries and the Scientific Community?" Available at <http://biocultural.iied.org/nagoya-protocol-access-genetic-resources-and-benefit-sharing> (Accessed on 09-04-11)

266. Union for Ethical BioTrade.

and specified.²⁶⁷ Against the background that little progress has so far been made on such compliance or user-country measures and that this is widely perceived as one of the biggest obstacles for fair and equitable benefit-sharing, the issue was one of the most critical point of the negotiations.²⁶⁸

Whereas Article 15 and Article 16 NP leave it primarily to Parties to decide on “*appropriate, effective, and proportionate legislative, administrative or policy measures*” for compliance, Article 17 NP (*Monitoring the Utilization of Genetic Resources*) requires Parties to support compliance by monitoring and enhancing transparency about the utilization of genetic resources. A correspondent provision on TK is missing which could have far reaching consequences taking into account the clear distinction the NP draws between the utilization of genetic resources and the utilization of TK.²⁶⁹

The most important requirement for Parties listed in Article 17.1(a) NP is the designation of one or more checkpoints. Checkpoints shall receive or collect information related to PIC, the source and utilization of the genetic resource and the establishment of MAT and submit it to relevant authorities, the provider party, and the ABS Clearing-House Mechanism.

To facilitate monitoring the Protocol introduces internationally recognized certificates of compliance which “shall serve as evidence that the genetic resource which it covers has been accessed in

267. <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52012SC0292> (Accessed on 12-06-11).

268. Christine Godt, Enforcement of Benefit-Sharing Duties in User Countries, in: Kamau, Fedder & Winter,; Nijar, The Nagoya Protocol on Access and Benefit Sharing of Genetic Resources: Analysis and Implementation Options for Developing Countries at 11; Union for Ethical Bio Trade.

269. *Id.*, 252 & 253.

accordance with [PIC] and that [MAT] have been established” (Article 17.3 NP). Thereby the already mentioned permit issued in accordance with Article 6.3(e) NP shall constitute such a certificate (Article 17.2 NP).

The demand mainly from developing countries to include a list of mandatory checkpoints was not successful. Nevertheless Article 17.1(a)(iv) specifies that check points “*must be effective and should have functions relevant to implementation of this subparagraph (a). They should be relevant to the utilization of genetic resources, or to the collection of relevant information, at, inter alia, any stage of research, development, innovation, precommercialization or commercialization.*”

Possible checkpoints could for example include the patent application process (in response to the already mentioned critical relationship with IP protection), application processes for government funding for biodiversity-based research and development or market approval processes.²⁷⁰ Whereas Article 17 NP only monitors the establishment of MAT, Article 18 (Compliance with [MAT]) aims at achieving compliance with MAT by requiring Parties to encourage providers and users to include provisions in MAT to cover dispute resolution. In the following examples are listed specifying what those provisions should encompass. Article 18 NP thus makes clear that the enforcement of MAT and thus benefit-sharing is an issue of contract enforcement.²⁷¹

270. Union for Ethical BioTrade.

271. Kamau, Fedder & Winter, "The Nagoya Protocol on Access to Genetic Resources and Benefit Sharing: What is New and what are the Implications for Provider and User Countries and the Scientific Community?" 6 Law, Environment, and Development Journal 3 (2010) at 252.

This leads Kamau, Fedderer & Winter to the conclusion that the main problem is the material issue that shall be checked: “There is no specified obligation of user states to ensure benefit sharing. As before, the enforcement of benefit-sharing duties is left to contractual means, with all the difficulties of forum, litigation costs, and prosecution of titles. The fact that the Protocol does not go further in that direction constitutes a major disappointment for the provider side.”²⁷² Nevertheless Parties shall take measures regarding access to justice and the utilization of mechanisms regarding mutual recognition and enforcement of foreign judgments and arbitral awards (Article 18.3) and paragraph 4 specifically requires the review of the effectiveness of this article.

3.5 INTERNATIONAL TREATY OF FAO²⁷³

272. *Id.*, 257

273. Food and Agriculture Organization of the United Nations- It is an agency of the United Nations that leads international efforts to defeat hunger. Serving both developed and developing countries, FAO acts as a neutral forum where all nations meet as equals to negotiate agreements and debate policy. FAO is also a source of knowledge and information, and helps developing countries and countries in transition modernize and improve agriculture, forestry and fisheries practices, ensuring good nutrition and food security for all. The world headquarters are located in Rome, in the former seat of the Department of Italian East Africa. One of the most notable features of the building was the Axum Obelisk which stood in front of the agency seat, although just outside the territory allocated to FAO by the Italian Government. It was taken from Ethiopia by Benito Mussolini's troops in 1937 as a war chest, and returned on 18 April 2005. For, 2014–2015, FAO has outlined the following priorities in its fight against hunger:

- Help eliminate hunger, food insecurity and malnutrition – contribute to the eradication of hunger by facilitating policies and political commitments to support food security and by making sure that up-to-date information about hunger and nutrition challenges and solutions is available and accessible.
- Make agriculture, forestry and fisheries more productive and sustainable – promote evidence-based policies and practices to support highly productive agricultural sectors (crops, livestock, forestry and fisheries), while ensuring that the natural resource base does not suffer in the process.
- Reduce rural poverty – help the rural poor gain access to the resources and services they need – including rural employment and social protection – to forge a path out of poverty.
- Enable inclusive and efficient agricultural and food systems – help to build safe and efficient food systems that support smallholder agriculture and reduce poverty and hunger in rural areas.
- Increase the resilience of livelihoods from disasters – help countries to prepare for natural and human-caused disasters by reducing their risk and enhancing the resilience of their food and agricultural systems.

The International Treaty²⁷⁴ was adopted by the 31st FAO Conference on 3 November, 2001 after seven years of complex and thorny negotiations. It entered into force 29 June, 2004 and there are a total of 197 members comprising 194 member nations, 1 member organization (European Union) and 2 associate members (Faroe Islands and Tokelau).²⁷⁵

Article 1.1 states as the objectives of the International Treaty: (1) the conservation and (2) sustainable use of Plant Genetic Resources for Food and Agriculture (PGRFA) and (3) the fair and equitable sharing of the benefits arising out of their use. Pursuant to Article 1.2, these objectives are to be attained by closely linking the International Treaty to FAO and the CBD.

The International Treaty covers PGRFA²⁷⁶, a special category of

274. www.fao.org/docrep/meeting/004/Y2481e.htm - 6k,(Accessed on 05-05-12).

275. www.fao.org/ ,(Accessed on 05-05-15).

276. The International Treaty on Plant Genetic Resources for Food and Agriculture (IT PGRFA- It is popularly known as the International Seed Treaty, is a comprehensive international agreement in harmony with the Convention on Biological Diversity, which aims at guaranteeing food security through the conservation, exchange and sustainable use of the world's plant genetic resources for food and agriculture (PGRFA), as well as the fair and equitable benefit sharing arising from its use. It also recognizes Farmers' Rights, subject to national laws to: a) the protection of traditional knowledge relevant to plant genetic resources for food and agriculture; b) the right to equitably participate in sharing benefits arising from the utilisation of plant genetic resources for food and agriculture; and c) the right to participate in making decisions, at the national level, on matters related to the conservation and sustainable use of plant genetic resources for food and agriculture. The Treaty establishes the Multilateral System of Access and Benefit-sharing to facilitate plant germplasm exchanges and benefit sharing through Standard Material Transfer Agreement (SMTA).The treaty has implemented a Multilateral System (MLS) of access and benefit sharing, among those countries that ratify the treaty, for a list of 64 of some of the most important food and forage crops essential for food security and interdependence. The genera and species are listed in Annex 1 to the treaty.The treaty was negotiated by the Food and Agriculture Organization of the United Nations (FAO) Commission on Genetic Resources for Food and Agriculture (CGRFA) and since 2006 has its own Governing Body under the aegis of the FAO. The Governing Body is the highest organ of the Treaty as established in Article 19. Composed of representatives of all Contracting Parties, its basic function is to promote the full implementation of the Treaty, including the provision of policy guidance on the implementation of the Treaty. The Governing Body elects its Chairperson and Vice-Chairpersons, in conformity with its Rules of Procedure. They are collectively referred to as 'the Bureau'. There are 131 contracting parties to the Treaty (130 countries and the European Union) as of 2014.

plant genetic resources, and Traditional Knowledge relevant to PGRFA²⁷⁷ The treaty establishes in Article 10.2 a “Multilateral System of Access and Benefit Sharing” to facilitate access to PGRFA²⁷⁸ and to share the benefits in a fair and equitable way.²⁷⁹ Access and benefit sharing according to the International Treaty is thus based on a multilateral approach. According to Article 12.4, access is to be provided pursuant to a Standard Material Transfer Agreement (SMTA²⁸⁰).

The International Treaty addresses Traditional Knowledge in the context of Farmers’ Rights.²⁸¹ According to its Article 9.2,²⁸² the protection of Traditional Knowledge relevant to PGRFA is one possible measure to protect and promote Farmers’ Rights. The responsibility to realize Farmers’ Rights rests with national governments and is subject to

277. Article 3 - the provision of the International Treaty on the scope - only mentions PGRFA. However, based on Article 9.2(a), the International Treaty can be interpreted so as to cover Traditional Knowledge related to PGRFA as well.

278. Article 12 FAO-International Treaty.

279. Article 13 FAO-International Treaty.

280. The Standard Material Transfer Agreement is a mandatory model for parties wishing to provide and receive material under the Multilateral System. It is the result of lengthy negotiation among the Contracting Parties to the Treaty and may not be varied or abbreviated in any way. However, as a template, it contains some paragraphs and sections that need to be completed to each use. The material transfer agreements that use the standard template are private agreements between the particular providers and recipients but the Governing Body, through FAO as the Third Party Beneficiary, is recognized as having an interest in the agreements. The standard template has been developed to ensure that the provisions of the Treaty regarding the transfer of PGRFA under the Multilateral System are enforceable on users. Text of the Standard Material Transfer Agreement is available at <ftp://ftp.fao.org/ag/agp/planttreaty/agreements/smta/SMTAe.pdf> (Accessed on 12-06-15).

281. www.fni.no/farmers/main.html, last , (Accessed on 05-05-12).

282. Article 9.2 of the ITPGRFA reads as follows:

“The Parties agree that the responsibility for realizing Farmers' Rights, as they relate to Plant Genetic Resources for Food and Agriculture, rests with national governments. In accordance with their needs and priorities, each Party should, as appropriate, and subject to its national legislation, take measures to protect and promote Farmers' Rights, including:

- a) protection of Traditional Knowledge relevant to plant genetic resources for food and agriculture;
- b) the right to equitably participate in sharing benefits arising from the utilization of plant genetic resources for food and agriculture;
- c) the right to participate in making decisions, at the national level, on matters related to the conservation and sustainable use of plant genetic resources for food and agriculture.”

national legislation, needs and priorities. Furthermore, the wording of Article 9.2 is rather ‘soft’. Accordingly, the Contracting Parties of the International Treaty enjoy great freedom while implementing the provisions of Article 9(j) including on the protection of Traditional Knowledge.

3.6 THE FAO INTERNATIONAL CODE OF CONDUCT FOR PLANT GERMPLASM COLLECTING AND TRANSFER, 1993

The FAO International Code of Conduct for Plant Germplasm Collecting and Transfer is part of the FAO’s Global System on Plant Genetic Resources, the International Undertaking on Plant Genetic Resources and its annexes.²⁸³ The Code was adopted by the FAO Conference at its 27th session in November 1993. It is negotiated by its member nations through the Organization's Commission on Plant Genetic Resources. The Code is fully compatible with both the Convention on Biological Diversity and the International Undertaking on Plant Genetic Resources. The Code is voluntary and it primarily addresses governments.²⁸⁴ The Code provides a set of general principles that governments may use in developing national regulations or formulating bilateral agreements on the collection of germplasm. As stated in the preamble, the Code aims to promote the rational collection and sustainable use of genetic resources, to prevent genetic erosion, and to protect the interests of both donors and collectors of germplasm.

The Code is aimed at promoting the conservation, collection and use of plant genetic resources from their natural habitats or surroundings in ways that respect the environment and local traditions and cultures.²⁸⁵ It tries to involve

283. For the full text of the Code, see, < <http://www.fao.org/ag/agp/agps/PGR/icc/icce.htm> >, (Accessed on 10-10-11).

284. Article 3

285. Article 1

farmers, scientists, and organizations in conservation programs in countries where collecting is taking place, to promote the sharing of benefits and increase recognition of the rights and needs of local communities and farmers so that they may be compensated for their contribution to the conservation and development of plant genetic resources and not have their current benefits undermined by resource transfer. It obliges the collectors (i) to respect local customs, traditions, values, and property rights (ii) not deplete local resources and (iii) to work with the agreement of and in cooperation with local communities.²⁸⁶ It also lays down responsibilities of sponsors, curators and users.²⁸⁷

The curators are, under the Code, directed to take practical steps, such as the use of MTAs, to share benefits derived from collected germplasm with the local communities, farmers, and host countries.

So, the code is addressed primarily to governments and is to be implemented in harmony with the Convention on Biological Diversity and other legal instruments protecting biological diversity or parts of it. The Code, a voluntary one, was adopted by the FAO Conference and negotiated through what is now the 'Commission on Genetic Resources for Food and Agriculture'²⁸⁸, which also has the responsibility to oversee its implementation and review.

286. Articles 9 to 11

287. Articles 12-15

288. The Commission on Genetic Resources for Food and Agriculture is an intergovernmental forum, originally established by FAO in 1983 as the Commission on Plant Genetic Resources to deal with issues related only to plant genetic resources for food and agriculture. Since 1995, as a result of the expanded mandate agreed as a result of the coming into force of the Convention on Biological Diversity, the work of the Commission covers all components of biodiversity of relevance to food and agriculture - plants, animals, forests, aquatic and marine flora and fauna, invertebrates and micro-organisms. This biodiversity for food and agriculture includes *"the biological diversity present in or of importance to agricultural, pastoral, forest and aquatic production systems. It encompasses the variety and variability of animals, plants,[invertebrates] and micro-organisms at the*

3.7 CONVENTION CONCERNING INDIGENOUS PEOPLES IN INDEPENDENT COUNTRIES, 1989

The International Labour Organisation's Convention concerning indigenous peoples in independent countries (the ILO Convention No. 169)²⁸⁹ which came into force on September 5, 1991,²⁹⁰ asserts the right of indigenous and tribal people over their land. It affirms the right of indigenous peoples to self-identification.²⁹¹ International Labour Organisation has granted recognition to the spiritual, cultural and collective rights of indigenous people through this Convention.²⁹² Article 13 of the Convention obliges national

genetic, species and ecosystem levels that sustain the structure, functions and processes of production systems. This diversity has been managed or influenced by farmers, pastoralists, forest dwellers and fisherfolk for hundreds of generations and reflects the diversity of both human activities and natural processes." The Commission's membership is 177 countries and the European Union.(as of July,2014) The Commission is the only permanent forum for governments to discuss and negotiate matters specifically relevant to biological diversity for food and agriculture, including policies for the sustainable use and conservation of genetic resources for food and agriculture and the fair and equitable sharing of benefits derived from their use. Since its establishment, the Commission has overseen global assessments of the state of the world's genetic resources for food and agriculture and negotiated major international instruments. The Commission has adopted global assessments, and associated Global Plans of Actions, of the state of the world's plant, animal and forest genetic resources, is preparing an assessment on aquatic genetic resources for food and agriculture, and is embarking on a landmark assessment of the State of the World's Biodiversity for Food and Agriculture, due to be finalised in 2017. The latter will be a significant contribution by FAO to the United Nations Decade on Biodiversity. In 2013, the Commission celebrated 30 years with a series of meetings and events. A number of related interviews and presentations have been posted on its website.

- 289. Convention (No. 169) concerning Indigenous and Tribal Peoples in Independent Countries, adopted on 27, June 1989 by the General Conference of the International Labour Organization at its seventy-sixth session. 22 countries have rectified the Convention. Available at <http://www.ilo.org/> (Accessed on 12-09-14)
- 290. It replaced the earlier ILO Convention No. 107 of 1957 concerning Indigenous and Tribal Peoples in Independent Countries.
- 291. Article 1.2. Self-identification as indigenous or tribal shall be regarded as a fundamental criterion for determining the groups to which the provisions of this Convention apply. Also see, Peter-Tobias Stoll and Anja von Hahn, "Indigenous Knowledge and Indigenous Resources in International Law," in Sinke von Lewinsky (ed.), *Indigenous Heritage and Intellectual Property: Genetic Resources, Traditional Knowledge and Folklore*, Kluwer Law International, New York, 2004, p. 21-22.
- 292. Article 13.1: In applying the provisions of this Part of the Convention governments shall respect the special importance for the cultures and spiritual values of the peoples concerned of their relationship with the lands or territories, or both as applicable, which they occupy or otherwise use, and in particular the collective aspects of this relationship.

states to respect the special importance for cultures and spiritual values of the peoples concerned of their relationship with the land or territories or both.²⁹³ States are obliged to promote full realization of the social, economic and cultural rights of these peoples with respect for their social and cultural identity; their customs and traditions and their institutions.²⁹⁴ Governments are required to develop, with the participation of the peoples concerned, co-ordinate and systematic action to protect the rights of these peoples and guarantee respect for their integrity.²⁹⁵ Under article 5, their social, cultural, religious and spiritual values and practices are to be recognized and protected.²⁹⁶ Article 15.1 of the Convention recognizes rights of the indigenous peoples to the natural resources pertaining to their lands and their right to a voice when access to natural resources on their lands and territories is at issue.²⁹⁷

Within the context of Convention, the concept of cultural identity thus provides an important link between cultural rights and cultural heritage, implying the collective right of indigenous peoples to the protection of their own cultural heritage. The Convention, although not defining TK or explicitly

293. Part II, Article 13.1: In applying the provisions of this Part of the Convention governments shall respect the special importance for the cultures and spiritual values of the peoples concerned of their relationship with the lands or territories, or both as applicable, which they occupy or otherwise use, and in particular the collective aspects of this relationship. (2) The use of the term "lands" in Articles 15 and 16 shall include the concept of territories, which covers the total environment of the areas which the peoples concerned occupy or otherwise use.

294. Article 2(b)

295. Article 2(a)

296. Article 5: In applying the provisions of this Convention: (a) The social, cultural, religious and spiritual values and practices of these peoples shall be recognized and protected, and due account shall be taken of the nature of the problems which face them both as groups and as individuals; (b) The integrity of the values, practices and institutions of these peoples shall be respected; (c) Policies aimed at mitigating the difficulties experienced by these peoples in facing new conditions of life and work shall be adopted, with the participation and co-operation of the peoples affected.

297. Article 15.1: The rights of the peoples concerned to the natural resources pertaining to their lands shall be specially safeguarded. These rights include the rights of these peoples to participate in the use, management and conservation of these resources.

mentioning indigenous resources or folklore, nevertheless recognizes the rights of indigenous peoples over natural resources pertaining to their land and to their traditional activities in order to maintain their cultures and economic self-reliance and development, which are to be safeguarded.²⁹⁸ More importantly, under article 7, the indigenous people can decide their own priorities for the process of development as it affects their lives, beliefs, institutions and spiritual well-being and the lands they occupy or otherwise use, and to exercise control, to the extent possible, over their own economic, social and cultural development. The Convention clearly accepts the inter-relationship between cultural heritage law, land rights and cultural rights of indigenous peoples in their own traditions, which includes Traditional Knowledge as well. Though the Convention is not directly addressing the issue of protection of TK, it is important in providing a model definition of indigenous and tribal peoples.²⁹⁹

3.8 UN DECLARATION ON THE RIGHTS OF INDIGENOUS PEOPLES, 2007

UN General Assembly adopted the Declaration on the Rights of Indigenous Peoples in September 2007. The Declaration sets out the minimum standards for the survival, dignity and well-being of the indigenous peoples of the world.³⁰⁰ Article 1 of the Declaration states that indigenous peoples have the right to the full enjoyment of all human rights and fundamental freedoms as recognized in the Charter of the United Nations, the Universal Declaration of Human Rights and international human rights law. It accepts the right of

298. Articles 15 and 23

299. Articles 1(a) and 1(b): It states that people are considered indigenous either (i) because they are descendants of those who lived in the area before colonization; or (ii) because they have maintained their own social, economic, cultural and political institutions since colonization and the establishment of new states.

300. Article 43 states that the rights recognized in the declaration constitute the minimum standards for the survival, dignity and well-being of the indigenous peoples of the world.

self-determination of indigenous peoples.³⁰¹ It recognizes their collective right to live in freedom, peace and security as distinct peoples.³⁰² It also reaffirms their right to traditional medicines and to maintain their health practices, including the conservation of their vital medicinal plants, animals and minerals.³⁰³

Article 25 confers on indigenous peoples the right to maintain and strengthen their distinctive spiritual relationship with their traditionally owned resources.³⁰⁴ The Declaration further establishes their right to the full recognition of their laws, traditions and customs.³⁰⁵

Article 15 provides for their right to the dignity and diversity of their cultures, traditions, histories and aspirations.³⁰⁶ Additionally, it recognizes their right to practice and revitalize their cultural traditions and customs and the right to maintain, protect and develop the past, present and future

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- 301. Article 3: Indigenous peoples have the right to self-determination. By virtue of that right they freely determine their political status and freely pursue their economic, social and cultural development. Further, article 33 states that indigenous peoples have the right to determine their own identity or membership in accordance with their customs and traditions.
 - 302. Article 7 (2): Indigenous peoples have the collective right to live in freedom, peace and security as distinct peoples and shall not be subjected to any act of genocide or any other act of violence, including forcibly removing children of the group to another group.
 - 303. Article 24(1): Indigenous peoples have the right to their traditional medicines and to maintain their health practices, including the conservation of their vital medicinal plants, animals and minerals. Indigenous individuals also have the right to access, without any discrimination, to all social and health services.
 - 304. Article 25: Indigenous peoples have the right to maintain and strengthen their distinctive spiritual relationship with their traditionally owned or otherwise occupied and used lands, territories, waters and coastal seas and other resources and to uphold their responsibilities to future generations in this regard.
 - 305. Article 27: States shall establish and implement, in conjunction with indigenous peoples concerned, a fair, independent, impartial, open and transparent process, giving due recognition to indigenous peoples' laws, traditions, customs and land tenure systems, to recognize and adjudicate the rights of indigenous peoples pertaining to their lands, territories and resources, including those which were traditionally owned or otherwise occupied or used. Indigenous peoples shall have the right to participate in this process.
 - 306. Article 15(1): Indigenous peoples have the right to the dignity and diversity of their cultures, traditions, histories and aspirations which shall be appropriately reflected in education and public information.

manifestations of their cultures.³⁰⁷ The states are obliged to restitute their cultural, intellectual, religious and spiritual property taken without their free, prior and informed consent or in violation of their laws, traditions and customs.³⁰⁸ The Declaration demands that states must abstain from removing indigenous peoples from their lands. Any relocation must be effected only with their prior and informed consent.³⁰⁹ Article 8 (2) (b) demands states to provide effective mechanisms for prevention of, and redress for any action which has the aim or effect of dispossessing them of their lands, territories or resources.

Article 12 focuses on religious traditions, customs and ceremonies of indigenous peoples and it acknowledges the right to manifest, practice, develop and teach their spiritual and religious traditions, customs and ceremonies; the right to maintain, protect, and have access in privacy to their religious and cultural sites; the right to the use and control of their ceremonial objects; and the right to the repatriation of their human remains.

Indigenous peoples' right over Traditional Knowledge is recognized in article 31 (1). The same article also establishes their intellectual property over cultural heritage, Traditional Knowledge, and traditional cultural expressions. Article 31(1) runs as follows:

“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,

307. Article 11(1)

308. Article 11 (2).

309. Article 10: Indigenous peoples shall not be forcibly removed from their lands or territories. No relocation shall take place without the free, prior and informed consent of the indigenous peoples concerned and after agreement on just and fair compensation and, where possible, with the option of return.

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.”

This article establishes link between Traditional Knowledge and intellectual property and the collective right to own and control their own cultural property. Under article 31 (2) states are obliged to take effective measures to recognize and protect the exercise of these rights. The provision is thus wide in its implications.

It declares the indigenous peoples’ right to own, use, develop and control the lands, territories and resources that they possess and the states’ responsibility to legally recognize and protect their resources.³¹⁰

Article 32 is a very important provision since it establishes the concept of free and informed consent prior to the approval of any project affecting their lands or other resources. It states as under:

“Indigenous peoples have the right to determine and develop priorities and strategies for the development or use of their lands or territories and other resources. States shall consult and cooperate in good faith with the indigenous peoples concerned

310. Article 26 (1): Indigenous peoples have the right to the lands, territories and resources which they have traditionally owned, occupied or otherwise used or acquired. (2). Indigenous peoples have the right to own, use, develop and control the lands, territories and resources that they possess by reason of traditional ownership or other traditional occupation or use, as well as those which they have otherwise acquired. (3). States shall give legal recognition and protection to these lands, territories and resources. Such recognition shall be conducted with due respect to the customs, traditions and land tenure systems of the indigenous peoples concerned.

through their own representative institutions in order to obtain their free and informed consent prior to the approval of any project affecting their lands or territories and other resources, particularly in connection with the development, utilization or exploitation of mineral, water or other resources. States shall provide effective mechanisms for just and fair redress for any such activities, and appropriate measures shall be taken to mitigate adverse environmental, economic, social, cultural or spiritual impact.”

Article 28 provides for just, fair and equitable compensation in case of appropriation of their resources.³¹¹ Article 29 recognizes their right to the conservation and protection of the environment and other resources.³¹² Besides, article 38 requires states, in consultation and cooperation with indigenous peoples, to devise appropriate measures, including legislative measures, to achieve the ends of the Declaration. Article 40 assures effective remedies for all infringements of their individual and collective rights and emphasizes on due consideration to the customs, traditions, rules and legal systems of the indigenous peoples concerned in all decisions pertaining to them.³¹³

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311. Article 28 (1): Indigenous peoples have the right to redress, by means that can include restitution or, when this is not possible, just, fair and equitable compensation, for the lands, territories and resources which they have traditionally owned or otherwise occupied or used, and which have been confiscated, taken, occupied, used or damaged without their free, prior and informed consent. (2). Unless otherwise freely agreed upon by the peoples concerned, compensation shall take the form of lands, territories and resources equal in quality, size and legal status or of monetary compensation or other appropriate redress.
312. Article 29 (1): Indigenous peoples have the right to the conservation and protection of the environment and the productive capacity of their lands or territories and resources. States shall establish and implement assistance programmes for indigenous peoples for such conservation and protection, without discrimination.
313. Article 40: Indigenous peoples have the right to access to and prompt decision through just and fair procedures for the resolution of conflicts and disputes with States or other parties, as well as to effective remedies for all infringements of their individual and collective

Articles 18³¹⁴ and 19³¹⁵ oblige the national states to ensure that the interests of the indigenous peoples are properly reflected and protected in all decision making processes. The Declaration is thus a significant step in protecting the rights of indigenous peoples, including their Traditional Knowledge.

3.9 THE COVENANT ON INTELLECTUAL, CULTURAL AND SCIENTIFIC RESOURCES

The Global Coalition for Bio-cultural Diversity developed the Covenant on Intellectual, Cultural and Scientific Resources. It is based on the view that protecting Traditional Knowledge is central to any negotiation between local communities and outside institutions.³¹⁶

The Covenant is intended to guide negotiating partners into an ethical and equitable association of mutual benefit. It establishes a basic set of principles to be adopted by all partners, while emphasizing that to strengthen local communities and the conservation of biological diversity, a long-term commitment is necessary.

The intellectual, cultural and scientific property rights are seen in the Covenant as a starting point to defining a more useful category of traditional

rights. Such a decision shall give due consideration to the customs, traditions, rules and legal systems of the indigenous peoples concerned and international human rights.

314. Article 18: Indigenous peoples have the right to participate in decision-making in matters which would affect their rights, through representatives chosen by themselves in accordance with their own procedures, as well as to maintain and develop their own indigenous decision-making institutions.

315. Article 19: States shall consult and cooperate in good faith with the indigenous peoples concerned through their own representative institutions in order to obtain their free, prior and informed consent before adopting and implementing legislative or administrative measures that may affect them.

316. WIPO/GRTKF/IC/1/12. (This document was submitted by the Delegation of Zambia in the meeting of “Intergovernmental committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore”, WIPO, Geneva on May 3, 2001).

values, knowledge, and resources that have often been used and misused without authorization, recognition of origin, or just compensation.

The essence of this Covenant is the development of responsible research and equitable trade. Any intellectual property rights agreement must inevitably deal with protection of TK. It asserts that the first concern of indigenous peoples is their right not to sell, commoditize or have expropriated from them certain domains of knowledge and certain sacred places, plants, animals and objects. It recognizes the categories of knowledge base for protection which include:

- a)** knowledge of current use, previous use, and/or potential use of plant and animal species, as well as soils and minerals
- b)** knowledge of preparation, processing, or storage of useful species
- c)** knowledge of formulations involving more than one ingredient
- d)** knowledge of individual species (planting methods, care for, selection criteria, etc.)
- e)** knowledge of ecosystem conservation (methods of protecting or preserving a resource that may be found to have commercial value, although not specifically used for that purpose or other practical purposes by the local community or the culture)
- f)** biogenetic resources that originate (or originated) on indigenous lands and territories
- g)** cultural property (images, sounds, crafts, arts and performances) and
- h)** classificatory systems of knowledge, such as traditional plant taxonomies.

3.10 DECLARATION OF PRINCIPLES OF THE WORLD COUNCIL OF INDIGENOUS PEOPLES, 1984³¹⁷

The Fourth General Assembly of the World Council of Indigenous Peoples took place in Panama in September, 1984 resolved and ratified the Declaration of Principles of the World Council of Indigenous Peoples. It reaffirmed the indigenous peoples' right to self determination.³¹⁸ It required that the customs and usages of the indigenous peoples must be respected by the national states and recognized as a legitimate source of rights.³¹⁹ Besides declaring exclusive rights to their traditional lands and resources³²⁰ it also proclaimed that the indigenous peoples have inalienable rights over their traditional lands and over the use of their natural resources.³²¹ The rights of the indigenous peoples to their lands includes: the soil, the subsoil, coastal territorial waters in the interior, and coastal economic zones all within the limits specified by international legislation. It assured their right to freely use their natural wealth and resources in order to satisfy their needs. It also demanded free and well-informed consent of the affected indigenous peoples before any activity in their land and resources. It asserted that the indigenous peoples and their designated authorities have the right to be previously consulted and to authorize the implementation of technological and scientific research conducted within their territories and the right to be informed about

317. The World Council of Indigenous Peoples (WCIP) was a formal international body dedicated to having concepts of aboriginal rights accepted on a worldwide scale. The WCIP had observer status in the United Nations, a secretariat based in Canada and represented over 60,000,000 Indigenous peoples worldwide. The council dealt with the economic, cultural, political, and social rights of indigenous peoples, along with the retention of their land and natural resources. Before dissolving in 1996 the WCIP was a powerful force for indigenous peoples, giving its members a concrete experience in international politics. Though it made much progress for the rights of Indigenous peoples and groups, the WCIP dissolved in 1996 due to internal conflict.

318. IWGIA Newsletter, No. 40, December 1984, p. 88-130.

319. Principle 1

320. Principle 4

321. Principle 9

the results of such activities.³²² These principles constituted the minimal rights to which indigenous peoples are entitled and which are to be complemented by all nation-states.

3.11 KARI-OCA DECLARATION AND THE INDIGENOUS PEOPLES' EARTH CHARTER, 1992

The World Conference of Indigenous Peoples on Territory, Environment and Development signed the Earth Charter at Kari-Oca, Brazil, on 30th May, 1992. The indigenous peoples of the America, Asia, Africa, Australia, Europe, and the Pacific united to endorse the Declaration. It emphasizes their right to maintain traditional and spiritual way of life and their right to own their knowledge and language. It further states that “our health rights must include the recognition and respect of Traditional Knowledge held by indigenous healers. This knowledge, including our traditional medicines and their preventive and spiritual healing power, must be recognized and protected against exploitation.... Indigenous peoples’ inalienable rights to land and resources confirm that we have always had ownership and stewardship over our traditional territories. We demand that these be respected.”

The main provisions in the Charter include

- a) indigenous wisdom must be recognized and encouraged
- b) the Traditional Knowledge of herbs and plants must be protected and passed onto future generations
- c) traditions cannot be separated from land, territory, or science
- d) Traditional Knowledge has enabled indigenous peoples to survive

322. Principle 15.

- e) the usurping of traditional medicines and knowledge from indigenous peoples should be considered a crime against peoples
- f) as creators and carriers of civilizations which have given and continue to share knowledge, experience, and values with humanity, the right to intellectual and cultural properties of the indigenous communities must be guaranteed. This respect must include the right over genetic resources, gene banks, biotechnology, and knowledge of biodiversity programs.

3.12 THE MATAATUA DECLARATION ON CULTURAL AND INTELLECTUAL PROPERTY RIGHTS OF INDIGENOUS PEOPLES, 1993

In connection with the United Nations International Year for the World's Indigenous Peoples, the tribes of Mataatua, in the Bay of Plenty Region of Aotearoa New Zealand, convened the first international conference on the Cultural and Intellectual Property Rights of Indigenous Peoples in 1993.³²³ The conference considered a range of significant issues, including the value of indigenous knowledge, biodiversity and biotechnology, customary environmental management, arts, music, language, and other physical and spiritual cultural forms. The conference passed the Mataatua Declaration on Cultural and Intellectual Property Rights of Indigenous Peoples. The declaration states that the indigenous peoples of the world have the right to self-determination, and in exercising that right they must be recognized as the exclusive owners of their cultural and intellectual property. It also recognizes that indigenous peoples are capable of managing their Traditional Knowledge

323. Fourmile, Henrietta "Making Things Work: Aboriginal and Torres Strait Islander Involvement in Bioregional Planning" Biodiversity Series Paper No. 10. Department of Environment, commonwealth of Australia (1996) Available at <http://www.environment.gov.au/biodiversity/publications/series/paper10/pubs/fourmile.pdf> (Accessed on 02-12-12).

themselves but are willing to offer it to all humanity provided their fundamental right to define and control knowledge are protected by the international community.

The Recommendations to Indigenous Peoples contained in the Declaration, state the following:

- a)** The first beneficiaries of indigenous knowledge consisting cultural and intellectual property rights must be the direct indigenous descendants of such knowledge.
- b)** All forms of discrimination and exploitation of indigenous peoples, indigenous knowledge, and indigenous cultural and intellectual property rights must cease.
- c)** Indigenous peoples should define for themselves their own intellectual and cultural property.
- d)** The existing protection mechanisms are insufficient for the protection of indigenous peoples' intellectual and cultural property rights.
- e)** There is a need to develop a code of ethics which external users must observe when recording (visual, audio, written) their traditional and customary knowledge.
- f)** Indigenous people must develop and maintain their traditional practices and sanctions for the protection, preservation, and revitalization of their traditional intellectual and cultural properties.
- g)** They must be recognized as guardians of their customary knowledge and have the right to protect and control dissemination of that knowledge.
- h)** Indigenous peoples also have the right to create new knowledge based on cultural traditions.
- i)** The cultural and intellectual property rights of indigenous peoples are vested with those who created them.

The Declaration recommends the United Nations to incorporate the Mataatua Declaration in its entirety in the United Nations Study on Cultural and Intellectual Property of Indigenous Peoples.

Thus, the Mataatua Declaration has a human-rights approach towards TK. It is remarkable since it has asked for a moratorium on any further commercialization of indigenous medicinal plants and human genetic materials until these communities have developed appropriate protection mechanisms.³²⁴

3.13 INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS (UPOV)³²⁵

The International Union for the Protection of New Varieties of Plants (UPOV) is an intergovernmental organization, established by the International Convention for the Protection of New Varieties of Plants (the “UPOV Convention”). The UPOV Convention was adopted on December 2, 1961, and revised in 1972, 1978 and 1991. The Mission of UPOV, based on the UPOV Convention, is: “To provide and promote an effective system of plant variety protection, with the aim of encouraging the development of new varieties of plants, for the benefit of society.” UPOV supports the view that the Convention on Biological Diversity (CBD) and relevant international instruments dealing with intellectual property rights, including the UPOV Convention, should be mutually supportive.

UPOV considers that plant breeding is a fundamental aspect of the sustainable use and development of genetic resources. It is of the opinion that

324. M. Blakeney, “Bioprospecting and the Protection of Traditional Medical Knowledge of Indigenous Peoples: An Australian Perspective”, EIPR, 298, 1997, p. 301.

325. The International Union for the Protection of New Varieties of Plants or UPOV (French: *Union internationale pour la protection des obtentions végétales*) is an intergovernmental organization with headquarters in Geneva, Switzerland.

access to genetic resources is a key requirement for sustainable and substantial progress in plant breeding. The concept of the “breeder’s exemption” in the UPOV Convention, whereby acts done for the purpose of breeding other varieties are not subject to any restriction, reflects the view of UPOV that the worldwide community of breeders needs access to all forms of breeding material to sustain greatest progress in plant breeding and, thereby, to maximize the use of genetic resources for the benefit of society.

3.13.1 UPOV AND FARM-MADE SEED

The provision on “farm-made seed” (also known as the “farmer’s privilege”)³²⁶ is an optional benefit sharing mechanism provided by the UPOV Convention, under which UPOV members may permit farmers, on their own farms, to use part of their harvest of a protected variety for the planting of a further crop. Under this provision, members of UPOV are able to adopt solutions, which are specifically adapted to their agricultural circumstances. However, this provision is subject to reasonable limits and requires that the legitimate interests of the breeder are safeguarded, to ensure there is a continued incentive for the development of new varieties of plants, for the benefit of society. For example, certain members of UPOV apply the provision on farm-made seed only to certain species or limit its application using criteria such as the size of the farmer’s holding or the level of production.

3.13.2 BENEFIT-SHARING

- **BREEDER’S EXEMPTION**³²⁷

UPOV would be concerned if any mechanism to claim the sharing of revenues were to impose an additional administrative burden on the authority

326. www.upov.int/en/about/upov_convention.htm - 18k,(Accessed on 05-05-12).

327. www.upov.int/en/news/2003/pdf/cbd_response_oct232003.pdf,(Accessed on 05-05-12).

entrusted with the grant of breeders' rights and an additional financial obligation on the breeder when varieties are used for further breeding. Indeed, such an obligation for benefit-sharing would be incompatible with the principle of the breeder's exemption established in the UPOV Convention whereby acts done for the purpose of breeding other varieties are not, under the UPOV Convention, subject to any restriction and the breeders of protected varieties (initial varieties) are not entitled to financial benefit-sharing with breeders of varieties developed from the initial varieties, except in the case of essentially derived varieties (EDV). Furthermore, a benefit-sharing mechanism within the legislation to grant breeder's rights would seem to tax only "protected" varieties and, instead of creating incentive mechanisms to develop new varieties, may provoke the opposite effect, whereby breeders would not develop new varieties or would not seek protection (favoring a legally insecure environment). The Food and Agriculture Organization of the United Nations (FAO), at its 31st Conference, on November 3, 2001, adopted the International Treaty on Plant Genetic Resources for Food and Agriculture.³²⁸

- **SUBSISTENCE FARMERS**

In addition to the breeder's exemption and the research exemption, the UPOV Convention contains another compulsory exception to the breeder's right whereby the breeder's right does not extend to acts done privately and for non-commercial purposes. Therefore, activities of subsistence farmers, where these constitute acts done privately and for non-commercial purposes, are excluded from the scope of the breeder's right and such farmers freely benefit from the availability of protected new varieties.

328. This treaty [Article 13.2 (d) (ii)] recognizes the concept of the breeder's exemption, in that breeders are exempted from financial benefit-sharing whenever their products are "available without restriction to others for further research and breeding....".

3.14 WORLD INTELLECTUAL PROPERTY ORGANIZATION (WIPO³²⁹)

WIPO has been active in the area of traditional cultural expressions (or folklore) for several decades. Resulting from these efforts were the Model Provisions for National Laws on the Protection of Expressions of Folklore³³⁰ against Illicit Exploitation and Other Prejudicial Actions

329. The World Intellectual Property Organization (WIPO) is one of the 17 specialized agencies of the United Nations. The predecessor to WIPO was the BIRPI (*Bureaux Internationaux Réunis pour la Protection de la Propriété Intellectuelle*, French acronym for *United International Bureaux for the Protection of Intellectual Property*), which had been established in 1893 to administer the Berne Convention for the Protection of Literary and Artistic Works and the Paris Convention for the Protection of Industrial Property. WIPO was formally created by the Convention Establishing the World Intellectual Property Organization, which entered into force on April 26, 1970. Under Article 3 of this Convention, WIPO seeks to "promote the protection of intellectual property throughout the world." WIPO became a specialized agency of the UN in 1974. The Agreement between the United Nations and the World Intellectual Property Organization notes in Article 1 that WIPO is responsible "for promoting creative intellectual activity and for facilitating the transfer of technology related to industrial property to the developing countries in order to accelerate economic, social and cultural development, subject to the competence and responsibilities of the United Nations and its organs, particularly the United Nations Conference on Trade and Development, the United Nations Development Programme and the United Nations Industrial Development Organization, as well as of the United Nations Educational, Scientific and Cultural Organization and of other agencies within the United Nations system." The Agreement marked a transition for WIPO from the mandate it inherited in 1967 from BIRPI, to promote the protection of intellectual property, to one that involved the more complex task of promoting technology transfer and economic development. Unlike other branches of the United Nations, WIPO has significant financial resources independent of the contributions from its Member States. In 2006, over 90 percent of its income of just over CHF 250 million was expected to be generated from the collection of fees by the *International Bureau* (IB) under the intellectual property application and registration systems which it administers (the Patent Cooperation Treaty, the Madrid system for trademarks and the Hague system for industrial designs). In October 2004, WIPO agreed to adopt a proposal offered by Argentina and Brazil, the "Proposal for the Establishment of a Development Agenda for WIPO" - from the Geneva Declaration on the Future of the World Intellectual Property Organization. This proposal was well supported by developing countries. The agreed "WIPO Development Agenda" (composed of over 45 recommendations) was the culmination of a long process of transformation for the organization from one that had historically been primarily aimed at protecting the interests of right holders, to one that has increasingly incorporated the interests of other stakeholders in the international intellectual property system as well as integrating into the broader corpus of international law on human rights, environment and economic cooperation.

330. In the international context, the cultural dimension of Traditional Knowledge has been discussed under the headings of "folklore." Since the term "folklore" has been criticized as having the negative connotation of "being associated with the creations of lower or

(Model Provisions) of 1982.³³¹ This sui generis model for the IP-type protection of traditional cultural expressions was elaborated by WIPO and the United Nations Educational, Scientific and Cultural Organization (UNESCO).

WIPO also addressed intellectual property issues related to Traditional Knowledge. In 1998-1999, it carried out numerous fact-finding missions, which involved a wide range of stakeholders, including indigenous and local communities, non-governmental organizations, governments, researchers and private industry.

The IGC³³² of WIPO was established by the 26th Session of the General Assembly of WIPO held in September 2000. Its first mandate for the years 2001 to 2003 covered the discussion of IPR-issues arising in the context of genetic resources, Traditional Knowledge and folklore. So far, the IGC has neither been able to establish a working definition of the term Traditional Knowledge, nor has it agreed on the policy objectives of the protection of this knowledge. Nevertheless, the IGC discussed and adopted several concrete measures with regard to Traditional Knowledge, including the development of inventories of on-line databases and periodicals as well as a toolkit on Traditional Knowledge. Furthermore, the IGC discussed elements of a sui generis system for the protection of Traditional Knowledge.³³³

The twenty-ninth session of the WIPO General Assembly, held in September 2003, decided to extend the mandate of the IGC for further two

superseded civilizations,” the terms “traditional cultural expressions” and “expressions of folklore” have lately been used as synonymous in the relevant international fora instead of the term “folklore.”

331. www.wipo.int/tk/en/documents/pdf/1982-folklore-model-provisions.pdf, (Accessed on 12-12-13).

332. IGC refers to Intergovernmental Committee.

333. www.law.ed.ac.uk/ahrc/SCRIPT-ed/vol2-2/TK.asp - 90k, ,(Accessed on 05-05-12).

years. Under this mandate,³³⁴ the IGC was to focus its work in particular on the international dimension of the issues arising. The WIPO General Assembly of September 2005 is again to decide on the extension of the mandate of the IGC.

The WIPO General Assembly at its Forty-Third (21st Ordinary) Session in September 2013 agreed on the mandate for the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (IGC) for the 2014/2015 biennium which are as follows³³⁵:

- a) The Committee will, during the next budgetary biennium 2014/2015, and without prejudice to the work pursued in other fora, continue to expedite its work with open and full engagement, on text-based negotiations with the objective of reaching an agreement on a text(s) of an international legal instrument(s) which will ensure the effective protection of GRs, TK and TCEs.
- b) The Committee will follow, as set out in the table below, a clearly defined work program, based on sound working methods, for the 2014/2015 biennium. This work program will make provision for three sessions of the IGC in 2014, including thematic and cross cutting/stocktaking sessions. At the beginning of IGC 26 an Ambassadorial/Senior Capital-Based Officials meeting will be held to share views on key policy issues relating to the negotiations, to further inform/guide the process. The IGC may decide to hold further

334. www.law.ed.ac.uk/ahrc/SCRIPT-ed/vol2-2/TK.asp - 90k, ,(Accessed on 05-05-14).

335. From the document prepared by the Secretariat, WIPO General Assembly on “Matters Concerning the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore” in Forty-Sixth (25th Extraordinary) Session Geneva, September 22 to 30, 2014 Available at http://www.wipo.int/edocs/mdocs/govbody/en/wo_ga_46/wo_ga_46_6.pdf (Accessed on 12-12-14).

Ambassadorial/Senior Capital-Based Officials meetings during future IGC meetings.

- c) The focus of the Committee's work in the 2014/2015 biennium will build on the existing work carried out by the Committee and use all WIPO working documents, including WIPO/GRTKF/IC/25/5, WIPO/GRTKF/IC/25/6 and WIPO/GRTKF/IC/25/7 which are to constitute the basis of the Committee's work on text-based negotiations, as well as any other textual contributions by members.
- d) The Committee is requested to submit to the 2014 General Assembly the text(s) of an international legal instrument(s) which will ensure the effective protection of GRs, TK and TCEs. With a view to finalising the text(s) within the biennium, the General Assembly in 2014 will take stock of and consider the text(s), progress made and decide on convening a Diplomatic conference, and will consider the need for additional meetings, taking account of the budgetary process.
- e) The General Assembly requests the International Bureau to continue to assist the Committee by providing Member States with necessary expertise and funding, in the most efficient manner, of the participation of experts from developing countries and LDCs, taking into account the usual formula.

The reform of the Patent Cooperation Treaty (PCT) began in October 2000.³³⁶ One issue being discussed in this reform is the declaration of the source of genetic resources and Traditional Knowledge in patent applications.³³⁷ So far, no decisions on these proposals have been

336. www.wipo.int/pct/reform/en/index.html. last visited 13 August 2008, ,(Accessed on 05-05-14).

337. This issue was introduced by Switzerland in May 2003 when it submitted its proposals to the WG on PCX-Reform to amend the PCX-Regulations.

taken by the Working Group.³³⁸

Traditional Knowledge is also being addressed by WIPO's Standing Committee on the Law of Patents (SCP) in its work on a Substantive Patent Law Treaty (SPLT).³³⁹ In its current text, the draft SPLT contains references to Traditional Knowledge in Articles 2(2), 13(4) and 14(3). Substantive discussions on these paragraphs, however, have been postponed to a later date.

3.15 TRIPS AGREEMENT

The TRIPS Agreement, one of the main pillars of the WTO, entered into force January 1, 1995. Currently, 148 States are Members of the WTO³⁴⁰ and thus bound by the TRIPS Agreement. Article 7 thereof states that the protection and enforcement of intellectual property rights *“should contribute to the promotion of technological innovation and to the transfer and dissemination of technology, to the mutual advantage of producers and users of technological knowledge and in a manner conducive to social and economic welfare, and to a balance of rights and obligations.”*³⁴¹

The TRIPS Agreement does not contain specific provisions on Traditional Knowledge; this notwithstanding, its provisions basically also apply to Traditional Knowledge, including in particular the provisions on geographical indications (Articles 23-24) patents (Articles 27 -34), and trade secrets (Article 39).

338. www.un.org/ga/president/63/statements/scrcform290109.shtml - 14k, ,(Accessed on 05-05-14).

339. www.wipo.int/patent/law/en/harmonization.htm, last visited 11 August 2005. ,(Accessed on 05-05-14).

340. www.wto.org/english/thewto_e/whatis_e/tif_e/org6_e.htm.(accessed on 12-12-14).

341. TRIPS Agreement, 1994.

The issue of Traditional Knowledge was explicitly included in the agenda of the TRIPS Council at the fourth Ministerial Conference of the WTO held in Doha, Qatar, in November 2001. In paragraph 19 of the Doha Ministerial Declaration, the Ministers instruct the TRIPS Council to examine, among others, the protection of Traditional Knowledge.³⁴² Up to now, the main focus of the examination foreseen in paragraph 19 was on disclosure requirements under patent law.

The above presentation demonstrates vividly the fragmentation and lack of coordination in dealing with Traditional Knowledge issues at the international level. While the significance of Traditional Knowledge has been acknowledged, the lack of coherence in the approaches in fact thwarts its effective protection.

3.15.1 PROTECTION OF TRADITIONAL KNOWLEDGE UNDER TRIPS

The negotiation and adoption of the TRIPS Agreement as part of the Uruguay Round in 1994 have added new dimensions to the debate on intellectual property rights in Traditional Knowledge.³⁴³ The TRIPS Agreement sets minimum standards for countries to follow in protecting intellectual property. Its objective is stated in the preamble as “to reduce distortions and impediments to international trade, and taking into account the need to promote effective and adequate protection of intellectual property rights, and to ensure that measures and procedures to enforce intellectual

342. Paragraph 19 of the Doha Ministerial Declaration reads as follows: “We instruct the Council for TRIPS, in pursuing its work program including under the review of Article 27.3(b), the review of the implementation of the TRIPS Agreement under Article 71.1 and the work foreseen pursuant to paragraph 72 of this declaration, to examine, inter alia, the protection of Traditional Knowledge and folklore. In undertaking this work, the TRIPS Council shall be guided by the objectives and principles set out in Articles 7 and 8 of the TRIPS Agreement and shall take fully into account the development dimension.”

343. www.wipo.int/export/sites/www/tk/en/hr/paneldiscussion/papers/word/mugabe.doc, (Accessed on 15-11-07).

property rights do not themselves become barriers to legitimate trade.”³⁴⁴ Countries that ratify the Agreement are expected to establish comprehensive intellectual property protection systems covering patents, copyright, geographical indications, industrial designs, trademarks, and trade secrets.³⁴⁵ However, Article 1 of the TRIPS Agreement (on the nature and scope of the obligations) provides some flexibility in the implementation of the provisions of the Agreement. It states in paragraph 1 of that Article that “members may, but shall not be obliged to, implement in their domestic law more extensive protection than is required by the Agreement, provided that such protection does not contravene the provisions of the Agreement.”³⁴⁶ According to Dutfield, parties to the TRIPS Agreement can invoke this provision to enact legislation for protecting Traditional Knowledge.³⁴⁷ He asserts “The absence of any mention of traditional ... knowledge in the Agreement, does not prevent any Member from enacting legislation to protect such a category of knowledge.”³⁴⁸ After reviewing the TRIPS Agreement, I consider that it is not possible to protect Traditional Knowledge under current patent law.³⁴⁹ The TRIPS Agreement requires Member States to provide patent protection 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

344. www.wipo.int/edocs/mdocs/innovation/en/wipo_ectk_sof_01/wipo_ectk_sof_01_3_1.doc -, (Accessed on 15-11-13).

345. www.ielrc.org/content/w0105.pdf, (Accessed on 15-11-13).

346. www.sisshyd.net/siddarth_mahajan.htm, (Accessed on 15-11-13).

347. www.wipo.int/edocs/mdocs/innovation/en/wipo_ectk_sof_01/wipo_ectk_sof_01_3_1.doc, (Accessed on 15-11-14).

348. www.ielrc.org/content/w0105.pdf, (Accessed on 15-11-14).

349. Some limited protection of Traditional Knowledge would be possible using regimes of copyright, trade secrets and geographical indications. These measures do, however, have their own limitations in protecting Traditional Knowledge as the intellectual property of traditional and local peoples. The problem, as we shall show, is because of the rigidities built in to these measures and the very nature of Traditional Knowledge.

industrial application.”³⁵⁰ The “inventive step” and “capable of industrial application” requirements are deemed “to be synonymous with the terms non obvious” and “useful” respectively.”³⁵¹ Traditional Knowledge products fail the test for patenting on one, or all, of the “new”, “inventive step” and “industrial application” standards. On the “new” standard they will probably fail because by its very nature Traditional Knowledge has been known for some length of time. One could try and argue that Traditional Knowledge is new to the world outside of the community from which it came but this is unlikely to succeed. Article 29.1 of the TRIPS Agreement requires that a patent applicant disclose sufficient and clear information regarding the invention so that another person “skilled in the art” would be able to reproduce the product or complete the process.³⁵² This is a standard patent law condition. Opponents of patenting have been quick to point out that this condition of information disclosure could erode the rights of indigenous and local people because it would make Traditional Knowledge easily available to commercial entities.³⁵³ Given the absence of financial and organizational competencies of indigenous and local peoples to monitor and enforce patents in modern economic space, their knowledge could easily be used without due compensation. On the whole, in our view, the conditions set under the TRIPS Agreement do not enable the patenting of Traditional Knowledge and/or traditional innovations. Article 27.2 of TRIPS states that “members may exclude from patentability inventions, the prevention within their territory of the commercial exploitation of which is necessary to protect *ordre public* or

350. Goldstein www.wto.org/english/tratop_e/trips_e/factsheet_pharm02_e.htm - 62k,(Accessed on 15-11-13).

351. www.allbusiness.com/legal/intellectual-property-patent/954286-1.html - 152k -, (Accessed on 15-11-14).

352. www.ielrc.org/content/w0105.pdf, (Accessed on 15-11-14).

353. www.wipo.int/export/sites/www/tk/en/hr/paneldiscussion/papers/word/mugabe.doc, (Accessed on 15-11-14).

morality, including to protect human, animal or plant life or health or to avoid serious prejudice to the environment, provided that such exclusion is not made merely because the exploitation is prohibited by domestic law.”³⁵⁴ The notions of *ordre public* (public order) and morality are not defined in the Agreement. However, it is clear that those inventions that cause injury to human, animal and plant life as well as the environment may be excluded. States are given flexibility to adjudicate. Some may still provide patent protection for inventions that cause damage to the environment. Patenting of genetically-engineered organisms and life forms is generally possible under these provisions. Further, it is also possible for a State to provide patent protection to a modified gene or a whole organism which meets the normal requirements Article 27.3(b) of the TRIPS Agreement has generated controversy and opportunity. It states that “members may also exclude from patentability... plants and animals other than micro organisms, and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes.”³⁵⁵ However, Members shall provide for the protection of plant varieties either by patents or by an effective *sui generis* system or by a combination thereof. The provisions of this sub-paragraph shall be reviewed four years after the entry into force of the WTO Agreement.”³⁵⁶ First, there is controversy as to what “an effective *sui generis*” regime is. “Effectiveness” of the *sui generis* system is not defined. The nature of a *sui generis* system is also left to individual members to determine. According to the Crucible Group report of 1994, the term *sui generis*... may offer a wider range of policy choices because it could presumably include any arrangement for plant varieties that offers recognition to innovators—with or

354. www.med.govt.nz/templates/MultipageDocumentPage____1343.aspx - 50k -, (Accessed on 14-01-13).

355. muse.jhu.edu/journals/nepantla/v003/3.2lander.html, (Accessed on 14-01-13).

356. *Id.*

without monetary benefit or monopoly control.”³⁵⁷ If there is any dispute on the nature and minimum standards of “an effective *sui generis*” system, the WTO is itself the mechanism for adjudication. Second, it has also been noted that multinational companies and developed countries are likely to promote plant breeders’ rights as the effective *sui generis* system. “Plant breeders’ rights may be used as a measure of effectiveness under the TRIPS Agreement thereby limiting the ability of developing countries to develop a system to properly reflect their own social and economic needs.”³⁵⁸ They will require or encourage developing countries to establish the UPOV arrangement. This could potentially remove plant varieties from the scope of the CBD and may significantly undermine the rights of local farmers. It could also erode prospects of ensuring that benefits from the use of plant genetic resources are shared in a fair and equitable manner.³⁵⁹ The TRIPS Agreement has, on the other hand, generated new opportunities to develop alternative property rights regimes which are ethically, socially and environmentally appropriate to the needs and conditions of indigenous and local people in developing countries. As stated earlier, under Article 27.3(b) of the TRIPS Agreement Members may establish effective *sui generis* regimes. This is an opportunity which developing countries should quickly tap by devising and promoting non-patent measures.

They could easily lose out if Article 27.3(b) were to be removed from the Agreement during its review in 1999. Some developed countries, particularly the U.S.A., are already campaigning for its removal so that no

357. www.wipo.int/edocs/mdocs/innovation/en/wipo_ectk_sof_01/wipo_ectk_sof_01_3_1.doc -, (Accessed on 14-01-13).

358. www.wipo.int/export/sites/www/tk/en/hr/paneldiscussion/papers/word/mugabe.doc, (Accessed on 14-01-11).

359. www.wipo.int/edocs/mdocs/innovation/en/wipo_ectk_sof_01/wipo_ectk_sof_01_3_1.doc (Accessed on 14-01-13).

restrictions are imposed on the patenting of life forms.³⁶⁰ The TRIPS Agreement itself does not provide any protection for the Traditional Knowledge and innovations of indigenous and local people but it creates flexibility for establishing alternative non-conventional intellectual property protection measures.³⁶¹ On the whole, conventional intellectual property law does not cover inventions and innovations of indigenous and local peoples. Their contributions to plant breeding, genetic enhancement, biodiversity conservation and global drug development are not recognized, compensated and even protected. Similarly, the Traditional Knowledge of indigenous and local peoples is not treated as intellectual property worth protection, while the knowledge of modern scientists and companies is granted protection.³⁶² As such, the patentability of products and/or processes derived from Traditional Knowledge of indigenous and local peoples poses a number of critical questions associated with compensation for the knowledge, and protection against future uncompensated exchange of the knowledge.³⁶³ The imbalances in the intellectual property system have been created and are sustained by established mechanisms of accessing the modern economic space and power. Indigenous and local people often experience insecure resource tenure, are financially weak, and lack institutional arrangements to safeguard their property rights. Thus, the issues extend to fundamental and more complex questions of human rights of these peoples.³⁶⁴

360. www.wipo.int/export/sites/www/tk/en/hr/paneldiscussion/papers/word/mugabe.doc, (Accessed on 14-01-13).

361. www.wipo.int/edocs/mdocs/innovation/en/wipo_ectk_sof_01/wipo_ectk_sof_01_3_1.doc, (Accessed on 14-01-13).

362. *Id.*

363. www.wipo.int/export/sites/www/tk/en/hr/paneldiscussion/papers/word/mugabe.doc, (Accessed on 14-01-14).

364. *Id.*

3.15.2 RELATIONSHIP BETWEEN TRIPS AND CBD

The discussions on relationship between TRIPS and CBD have always gained attention in international forum. Such discussions have ended up putting discussing panels into a dilemma. Analysts and representatives of some countries believe that, there is no conflict between the two international agreements. On the other hand, various analysts and diplomats support the notion that there are serious inherent tensions and conflicts between the two agreements. These tensions have been the subject to several analyses for instance, Tansey and Rajotte 2008; Dronamraju 2001; Bellmann, Dutfield & Ortiz 2003; Khor 2002; GRIAN 1998, etc.

3.15.3 NO CONFLICT BETWEEN TRIPS AND CBD

Developed countries see no conflict between the two international agreements. According to Tansey & Rajotte; Piva, and Gallagher; United States (US) and Japan believe that, the two agreements can be paired together in a mutually supportive manner. In addition to this, US have criticized the notion of amendment to the TRIPS Agreement by including a disclosure requirement. Rather, they support the view that, members should focus on the “remedies such as the use of organized databases, information material to patentability, and the use of post grant opposition or re- examination system as an alternative to litigation”.³⁶⁵

Also, Norway does not consider any contradiction between TRIPS and CBD and has “indicated its preference for national actions. However, Norway prefers to discuss the disclosure requirement in WTO, although possibly with

365. Geoffy Tansey & Tasmin Rajotte, *The Future Control of Food: A Guide to International Negotiations and Rules on Intellectual Property, Biodiversity and Food Security* (London: Earthscan, 2008) at 65

more limited language consistent knowledge, with its own national regulations”.³⁶⁶

On similar lines, Mehta and Sankar have added to above argument that no amendment is needed to TRIPS Agreement. Further, in order to give recognition to TK, they have suggested that, a “national contract-based system should be established outside the patent system to enforce the access and benefit sharing laws to prevent biopiracy”.³⁶⁷

3.15.4 CONFLICT BETWEEN TRIPS AND CBD

Many developing countries have observed the inconsistency between the two agreements; on protecting the biodiversity and associated TMK. Such incompatibilities of two agreements have been recognized by many scholars in their writings. For instance: Tansey and Rajotte contend that, developing countries do not recognize TRIPS IPR system as an appropriate tool to protect TMK. They argue that the “main concern of the developing countries is that TRIPS does not require patent applications whose inventions incorporate or use genetic material or associated knowledge to comply with the obligations of the CBD.”³⁶⁸ To this, developing countries have repeatedly voiced concern on the incompatibility between the two agreements and differences in their approach.

Supporting the above argument, Dronamraju states that, there are inherent tensions between the granting of IPR under TRIPS and the objectives of the CBD. He argues that Article 16 (5)³⁶⁹ of the CBD recognizes that, patent and other IPRs can have a negative effect on the implementation of the

366. Jorge Mario Martinez-Piva, *Knowledge generation and Protection: Intellectual Property, Innovation and Economic Development* (London: Springer, 2009) at 197

367. 3 See Pradeep S Mehta and U. Sankar, “The Convention of Biological Diversity” Madras School of Economics.

368. https://www.wto.org/english/tratop_e/trips_e/ipcw368_e.doc (Accessed on 11-09-11).

369. Article 16 of CBD: Access to and Transfer of Technology.

CBD provisions, and thus, urges parties to cooperate in this regard subject to national and international law to ensure that IPRs are supportive and do not run counter to CBD objectives.³⁷⁰

Many scholars have listed some crucial provisions enshrined in the TRIPS Agreement for consideration that undermines the spirit of CBD:

3.15.4.1 CONFLICTING OBJECTIVES AND DIFFERENCE IN THE OVERALL FRAMEWORK

Bellmann presented the most striking point of departure between CBD and TRIPS that lies in its objectives.³⁷¹ GRAIN, Khor & Dronamraju support his statement and argue that, the TRIPS Agreement is an “international agreement drawn up with the encouragement and active support of the large corporations to promote their technological dominance and to gain profits through obtaining private monopolies.”³⁷² TRIPS, “intended to provide private property rights over products and processes, be they biodiversity-based or not, in order to ensure that corporate interests are safeguarded equally worldwide”.³⁷³ Thus, TRIPS is recognized as a “commercial treaty with commercial objectives that largely benefit strong private firms”.³⁷⁴ On

370. Krishna R. Dronamraju and also see “Intellectual Property Rights, TRIPS Agreement and the CBD” Thrid World Network (2nd meeting of the expert panel on Access to Genetic Resources and benefit sharing) (19 march, 2001).

371. Biswajit Dhar, “The Convention on Biological Diversity and the TRIPS Agreement: Compatibility or Conflict” in Christophe Bellmann, Graham Dutfield & Ricardo Melendez-Ortiz, *Trading in Knowledge: Development Perspectives on TRIPS, Trade and Sustainability* (London: Eathscan, 2003) at 85. Also See Also See “TRIPS versus CBD: Conflicts Between the WTO Regime of Intellectual Property Rights and Sustainable Biodiversity Management” GRAIN (April 1998); See Martin Khor, *Intellectual Property, Biodiversity and Sustainable Development: Resolving the Difficult Issues* (London: Zed Books, 2002) at 54.

372. Martin Khor, *Intellectual Property, Biodiversity and Sustainable Development: Resolving the Difficult Issues* (London: Zed Books, 2002) at 54.

373. “TRIPS versus CBD: Conflicts Between the WTO Regime of Intellectual Property Rights and Sustainable Biodiversity Management” GRAIN (April 1998).

374. Jonathan Tanui and Irene Kinuthia, “Biodiversity, Traditional Knowledge and Intellectual Property in Kenya”, *Institute of Economic Affairs*, Available at file:///C:/Users/lenovo

the other hand, the central objective of the CBD is to conserve, protect and use biological diversity in a sustainable manner. “The establishment of the CBD was prompted mainly by the growing concern over the rapid worldwide loss of biodiversity, recognition of the important role of TK and the rights of local communities that developed and hold the knowledge and the need to regulate access to and the sharing of benefits. Therefore, the agenda of TRIPS is to privatize, and not to protect TK related biodiversity.”³⁷⁵

3.15.4.2 CONFLICTING PROVISIONS RELATED TO FOREIGNERS

Khor and Dronamraju argue that, national sovereignty principle is enshrined under Article 3³⁷⁶ and Article 15.1³⁷⁷ of CBD. These provisions assert that, states have the sovereign right to exploit their own biological resources along with the right to regulate access of foreigners to biological resources and knowledge, and to determine benefit sharing arrangements. However, TRIPS enable persons’ or institutions to patent a country’s biological resources in countries outside the country of origin of the resources or knowledge. In this manner TRIPS facilitates the condition for misappropriation of TK and appropriation of ownership rights over living organisms or knowledge associated with it. Therefore, the sovereignty of developing countries over their resources including access and benefit sharing arrangements is compromised.³⁷⁸

/Downloads/Biodiversity,-Traditional-Knowledge-and-Intellectual-Property-in-Kenya.pdf
(Accessed on 11-09-12).

375. *Id.*

376. Article 3 of CBD: Principle - States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.

377. Article 15.1 of CBD: Recognizing the sovereign rights of States over their natural resources, the authority to determine access to genetic resources rests with the national governments and is subject to national legislation.

378. *Supra note, 374.*

3.15.4.3 CONFLICTING RIGHTS OF IPR AND TK HOLDERS

Article 28³⁷⁹ of TRIPS Agreement states that, a patent confers exclusive rights to its owner and prevents third parties from making, using, offering for sale, selling or importing the patented product and process. Thus, Mehta confirms that, TRIPS recognizes IPR as private right which often constructs obstacles to the exchange or flow of knowledge and their use of production. To this, Domaraju argues that, such an exclusive and private right system clashes with the traditional, social and economic system in which local communities make use of biodiversity and the associated knowledge. Further he mentions that, the indigenous community knowledge is not confined to an individual rather it is orally transferred from generation to generation. On a legal basis, CBD has acknowledged such provisions that are encapsulated in Article 8 (j)³⁸⁰ and Article 15³⁸¹ of the CBD. However, such contribution and

379. Article 28 of CBD: Adoption of Protocols – 1. The Contracting Parties shall cooperate in the formulation and adoption of protocols to this Convention. 2. Protocols shall be adopted at a meeting of the Conference of the Parties. 3. The text of any proposed protocol shall be communicated to the Contracting Parties by the Secretariat at least six months before such a meeting.

380. Article 8 (j) of CBD: each contracting party shall 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 their wider application with the approval and involvement of the holders of such knowledge, innovations and practise and encourage the equitable sharing of benefits arising from the utilization of such knowledge innovations and practices.

381. Article 15 of CBD: 1. Recognizing the sovereign rights of States over their natural resources, the authority to determine access to genetic resources rests with the national governments and is subject to national legislation. 2. Each Contracting Party shall endeavour to create conditions to facilitate access to genetic resources for environmentally sound uses by other Contracting Parties and not to impose restrictions that run counter to the objectives of this Convention³. For the purpose of this Convention, the genetic resources being provided by a Contracting Party, as referred to in this Article and Articles 16 and 19, are only those that are provided by Contracting Parties that are countries of origin of such resources or by the Parties that have acquired the genetic resources in accordance with this Convention. 4. Access, where granted, shall be on mutually agreed terms and subject to the provisions of this Article. 5. Access to genetic resources shall be subject to prior informed consent of the Contracting Party providing such resources, unless otherwise determined by that Party. 6. Each Contracting Party shall endeavour to develop and carry out scientific research based on genetic resources provided by other Contracting Parties with the full participation of, and where possible in, such Contracting Parties. 7. Each Contracting Party shall take legislative, administrative or policy measures, as appropriate, and in accordance

the nature of community knowledge and rights are not recognized in TRIPS.³⁸²

3.15.4.4 MODERN TECHNOLOGY VERSUS TMK

CBD recognizes the role of TK in conservation and protection of biodiversity. However, TRIPS denies the role of TK and instead rewards additions made to the knowledge through modern technology. This different treatment for modern technology and TK is also associated with discrimination against local community rights. Nijar adds to this argument and states that such a treatment points out that TRIPS framework selectively favours developed countries and marginalized developing countries therefore creating more differences between TRIPS and CBD.³⁸³

3.15.4.5 BENEFIT SHARING ARRANGEMENTS

A key aspect of CBD is that, it recognizes the sovereign rights of the states over their biodiversity and knowledge. This gives the state; the right to regulate access and to enforce its rights on arrangements for sharing benefits. “Access where granted: should be on mutually agreed terms (Article 15.4) and shall subject to prior informed consent (Article 15.5). In addition to this, countries providing the resources should fully participate in the scientific research (Article 15.6). Each country should take legislative, administrative or policy measures with the aim of sharing fair and equitable results of research and development, and the benefit arising from commercial and other

with Articles 16 and 19 and, where necessary, through the financial mechanism established by Articles 20 and 21 with the aim of sharing in a fair and equitable way the results of research and development and the benefits arising from the commercial and other utilization of genetic resources with the Contracting Party providing such resources. Such sharing shall be upon mutually agreed terms.

382. *Supra note*, 374.

383. Noah Zerbe, “Contested Ownership: TRIPs, CBD, and Implications for Southern African Biodiversity”, *Perspectives on Global Development and Technology*, Volume 1, issue 3-4, 2002, p. 296.

utilization of genetic resources with the contracting parties providing such resources”.³⁸⁴

However, under TRIPS there is no such provision for the “patent holder, on claims involving biological resources or related knowledge, to share benefits with the state or communities in countries of origin”.³⁸⁵

3.15.4.6 PRIOR INFORMED CONSENT

Article 15.4 of the CBD recognizes the proviso of prior informed consent and states that, “access to genetic resources shall subject to prior informed consent of the contracting party provide such resources, unless otherwise determined by that party. Thus, researchers of biological resources are obliged to provide sufficient information of their work and should obtain consent from the owners.”³⁸⁶ Some countries have enshrined this provision in their regulatory framework for the protection of TK. For instance Africa has established Organization of African Unity (OAU) Model Legislation³⁸⁷ on Access to Biological Resources and Protection of Community Rights.

India enacted its ‘Indian Biodiversity Act, 2002’,³⁸⁸ that recognizes the provision of prior informed consent through National Biodiversity Authority (NBA).³⁸⁹ This authority acts as a watchdog over the researches that are performed on biological resources and makes it mandatory for the foreign

384. Supra note, 374.

385. *Id.*, 238.

386. “Intellectual Property Rights. TRIPS Agreement and the CBD” Third World Network (19th March 2001)

387. OAU Model Law, “African Model Legislation for the protection of the Breeders Rights of Local Communities, Framers and Breeders and for the regulation of Access to Biological Resources”, Algeria, 2000.

388. From official website of WIPO. (Accessed on 12-12-11)

389. The National Biodiversity Authority (NBA) was established in 2003 to implement India’s Biological Diversity Act (2002). The NBA is Autonomous body and that performs facilitative, regulatory and advisory function for Government of India on issue of Conservation, sustainable use of biological resource and fair equitable sharing of benefits of use.

researchers to disclose the purpose and utilization of the research. Nevertheless, in TRIPS, there is no such provision for patent applicants or other IPRs over biological resources for obtaining the prior informed consent.³⁹⁰

3.16 OPTIONS TO REDRESS THE SITUATION

There have been calls made by many parties, including several NGOs and governments, to “reconcile” the tensions or conflicts between TRIPS and the CBD. The issue of making the two agreements consistent with each other has also been discussed at the WTO especially in the Committee on Trade and Environment and at the TRIPS Council and at the CBD. The following discusses some of the broad options for such “reconciliation”.

3.16.1 MAINTAINING THE STATUS QUO

The first broad option is to take the approach that there are no real conflicts between TRIPS and the CBD, that in any case the two agreements should be left as they are able to coexist, and that if any problems arise, they can be dealt with in an ad-hoc manner on a case-by-case basis. This approach could take the view that TRIPS is a clear, legally-binding agreement with its own standing, and that the IPRs provisions in the CBD³⁹¹ clarify that whatever measures are stated therein have to be consistent with international law (including TRIPS); and therefore whatever actions are taken under the CBD have to be consistent with TRIPS. In effect, such an approach would be asking the CBD to conform to TRIPS, and (in the perspective of this approach) this conformity would resolve any tensions between the agreements.

390. Intellectual Property Rights, TRIPS Agreement and the CBD, Montreal, 2001, Available at www.twn.my/title/benefit.htm (Accessed on 12-09-11).

391. CBD, Article 16.

Such an approach would however be taking a narrow view of the area of interaction between the two agreements. As the above analysis shows, there are serious differences between TRIPS and the CBD in terms of paradigm, objectives and treatment of several issues, including national sovereignty over biological resources and related knowledge, the principle and implementation of benefit-sharing, prior informed consent, and recognition of the contribution of Traditional Knowledge and modern technology, of individuals and communities, and of rights to be conferred in relation to these.

These differences are such that following one approach would lead to a very different outcome from following the other approach. Thus, if and when a national authority tries to take both approaches simultaneously (in an effort to fulfill the two sets of obligations), a confusing and unsatisfactory situation is likely to arise. It is also likely that since the TRIPS Agreement is simpler to put into effect and has more enforcement strength at international level, maintaining the status quo between the two agreements would lead to TRIPS having practical precedence over the CBD in terms of the effects. Already there is a fast growing incidence of biopiracy, which is undermining the principles and effects of the CBD.

3.16.2 ENCOURAGING COUNTRIES TO USE THEIR OPTIONS UNDER TRIPS AND THE CBD IN FAVOUR OF SUSTAINABLE DEVELOPMENT

The second approach to reconcile the differences between TRIPS and the CBD would basically leave it to each country to interpret the agreements in ways that are most appropriate to it and maximising the creative use of provisions of each agreement to suit the country's chosen policies. Thus, a country that wishes to conserve biodiversity and related knowledge and to protect and promote community rights, farmers' rights and Traditional

Knowledge, as well as to assert national sovereignty and the state's rights to share benefits, could draft laws that attempt to meet these objectives whilst also remaining consistent with the obligations of TRIPS and the CBD.

Under this approach, WTO members could draft their patent laws in ways that fully take into account, the flexibility enabled by the following clauses in TRIPS:

Article 8, which states that “Members may, in formulating or amending their laws and regulations, adopt measures necessary to protect public health and nutrition, and to promote the public interest in sectors of vital importance to their socio-economic and technological development...”³⁹²: “This is an important provision for including in national legislation measures in furtherance of public health and other public interests. This provision also, arguably, allows for measures protective of the innovative capacity, knowledge systems and traditional lifestyles of indigenous peoples and local communities especially if it enhances the protection of biodiversity and the sustainable use of its components. A case can be readily made for the critical socioeconomic value of indigenous knowledge and this would make it WTO-legal for a country to protect and advance indigenous technology under Article 8.”

Article 27.2, which permits Members to exclude inventions from patentability on the grounds of protecting *ordre public* or morality including to protect human, animal or plant life or health or avoid serious prejudice to the environment. There is a basis for refusing patents for those genetically-modified products which would affect human, animal or plant life or that would seriously prejudice the environment. Patents can also be refused if they offend morality; thus a case could be made that patents on life forms (or at the

392. www.iprsonline.org/unctadictsd/docs/RB2.5_Patents_2.5.3_update.pdf (Accessed on 12-09-12)

least some types of life forms) could be rejected on the ground that it is immoral to manipulate human life, to interfere with life forms generally or to introduce genetic material across species. Some religious groups have opposed patents on life forms on religious and ethical grounds.

Article 27.3(b), which permits exclusion from patentability of plants and animals and of essentially biological processes.

Article 27.3(b), which also states that members must provide for protection of plant varieties either by patents or by an effective *sui generis* system or by a combination of both. Countries have the flexibility to choose a *sui generis* system that protects Traditional Knowledge, farmers' rights and local community rights.

Article 31 provides for national legislation to grant compulsory licences, and there are no limits to the kind of grounds on which this may be done. It is legitimate to formulate in domestic law a system that grants compulsory licences for reasons such as: (a) those set out in Article 8 (and under this, the protection of indigenous technologies and community rights): (b) where a licence is unreasonably refused to a local firm (c) where other anticompetitive practices by patent holders are identified.³⁹³

Also under this approach, countries that have ratified the CBD can fulfil their obligations to protect Traditional Knowledge and community rights through the enactment of national legislation that covers the following areas or elements:

- Recognition of Traditional Knowledge;
- Local community rights in relation to resources and knowledge;
- Access and benefit-sharing in relation to biodiversity resources and knowledge relating to their use, in which the rights of the state of the

393. Nijar 1996: pp 29-30.

country of origin, the farmers, indigenous peoples and local communities are fully taken into account.

A major drawback of this approach is that developing countries in general have limited capacity (in terms of policy-making, legal and administrative expertise) to analyse the international agreements and to formulate national policies and draft legislation with the sophistication required. Thus, they may not be able to make full use of the flexibilities in TRIPS and the CBD. Therefore, capacity building in this area would be required. Also, for this approach to work, developed countries would have to allow the developing countries to make use of the flexibilities in the agreements and not unduly put pressure on them when they do so.

3.16.3 REFORMS TO TRIPS AND THE CBD TO MAKE THEM CONSISTENT WITH SUSTAINABLE DEVELOPMENT OBJECTIVES

A third approach would be for the international community to opt in favour of giving priority to sustainable-development goals, and amend both TRIPS and the CBD to make them more consistent with these goals. Under this approach, the spirit, objectives and main paradigm of the CBD would be the main basis of the harmonisation process, which can be operationalised using the principles of sustainable development i.e. the protection and promotion of concerns for biodiversity and the environment, Traditional Knowledge, and the rights of indigenous and local communities and of the public interest.

This would require a review of TRIPS and the CBD, and suitable amendments to the relevant provisions. For example, in a review of TRIPS (which is provided for in Articles 27.3(b) and 71) amendments can be made in Article 27.3(b) to bring the scope of exclusion of biological materials and processes in line with environmental and ethical considerations as well as the

need for preventing biopiracy and an interpretation can be made that the sui generis option for plant varieties can include the protection of Traditional Knowledge and local community rights, in line with the CBD.

As proposed by some developing countries at the WTO, Article 29 can be amended to require that applications for patents covering biological resources or knowledge on their use should be accompanied by information on the country of origin and the prior informed consent of the state and relevant local communities of that country. This would enable TRIPS to complement the access and benefit-sharing component of the CBD, in order to make it operational.

Amendments can also be made to TRIPS to strengthen the obligations of developed countries to ensure the transfer of technology to developing countries or to operationalise the implementation of technology transfer. Consideration can also be given to revising TRIPS to allow for the exclusion or relaxation of standards of IPRs relating to environmentally sound technologies and technologies that relate to the use of biodiversity. This would bring TRIPS more in line with the spirit of the CBD, including the Article 16 provisions, such as those dealing with technology transfer on concessional and preferential terms³⁹⁴ and with the need to ensure that IPRs are supportive of and do not run counter to CBI objectives.³⁹⁵

In a review of the CBD, Article 16 could be amended to remove the tensions therein, so that the important objectives and principles of access to and transfer of technology to developing countries are not so constrained, as in the present CBD, by the references to the need to be consistent with adequate and effective protection of IPRs and international law. The

394. CBD, Article 16(2).

395. CBD, Article 16(5).

obligations on technology transfer can also be strengthened and the implementation made more operational.

It should also be recognized that the present provisions in the CBD on access to genetic resources now place the onus of implementation on national policies and legislation. However, measures by national authorities are insufficient to enable effective implementation of access and benefit-sharing arrangements. For example, in its national legislation, the state of a country of origin may require as part of its access contract that the collector cannot patent the product or knowledge (or that such a patent can be applied for only under certain conditions or benefit sharing arrangement) but that state would require the cooperation of patent authorities or biodiversity authorities of other states to be able to monitor or effectively implement that contract. An international protocol could be established to set guidelines and standards for access and for fair and equitable sharing of benefits, as well as to foster international cooperation to facilitate implementation of the access and benefit-sharing arrangements.

Finally, as the provisions under both instruments that would apply in the event of a conflict between them are not clear it seems that the mutual supportiveness and cooperative approach which has been called for seems the best solution.

3.16.4 DEVISING OF WELFARE MAXIMIZING CONTRACTS

From an economic viewpoint, a perfect contract should make the most of the summative surplus that can be bargained upon. It also should permit for the sharing of surplus in a fair and equitable way. Contracts, which seek to grant access to Traditional Knowledge, need to essentially have the necessary rudiments of welfare maximizing contracts. Welfare-maximizing contracts come only when the following particular conditions are fulfilled:

3.16.5 MUTUAL CONSENT

One prerequisite in welfare-maximizing contracts is the existence of well-defined and enforceable property rights and these rights can be interchanged only by reciprocated consent. It is the elementary principle of contract law that the contract must be arrived at by the mutual consent of the parties.³⁹⁶ There must be *consensus ad idem* between the parties, to mean that parties to the contract must agree on the same thing in the same sense.³⁹⁷ Shared consent in the bio-prospecting contracts makes clear that the projected value of the resource combines all the state of affairs of its usage -the opportunity cost of using the resource apart from the subjective benefits that the user links with the resource which includes social, cultural, moral and spiritual values.

3.16.6 EQUAL BARGAINING POWER

The subsequent state for welfare-maximizing contracts is the existence of equivalent bargaining power between the contracting parties. There should be no disabilities consequential from flawed competition in the bargaining process. Inequality of bargaining power vitiates the genuineness in a contract.³⁹⁸ Since the Traditional Knowledge holders usually do not have equal bargaining power, they are at a detrimental position. There should be a

396. Consensus theory of contract states that if there is no true, full and free consent, there is no contract. *Smith v. Wheetroft*, (1878) 9 Ch. D. 223 and *Lewis v. Averay*, (1972) 1 Q. B. 198. Also see, J. Beatson, *Anson's Law of Contract*, 28th Ed., Oxford University Press, 2002, p. 308.

397. *Raffles v. Wichelhaus*, (1864) 2 H & C 906, wherein it was held that it is essential to the creation of a contract that both parties should agree to the same thing in the same sense; and *Smith v. Hughes* (1871) L R6 Q. B. 579, wherein it was held that an agreement upon the same thing in the same sense is known as true consent or *consensus ad idem* and is the root of every contract.

398. For legal consequences of unconscionable and inequality of bargaining power in a contract, *The Common Law Library, Chitty on Contracts*, Vol. I, 29th Ed., Thomson, Sweet & Maxwell, London, 2004, p. 567-570

method to guarantee that the Traditional Knowledge holders' rights are well protected and their welfare is not undermined in the contract.

3.16.7 ABSENCE OF EXTERNALITY EFFECTS

The next situation for the effectiveness of contracts is the nonexistence of externality effects, such as biodiversity depletion. This standard is getting more force along with the principle of sustainable development. The actions in relation to bio research and innovation should not effect in reduction and exhaustion of biogenetic research. The contract must guarantee through its provision that bio-prospecting will not be resulting into biodiversity erosion and extermination of species. The bio-prospecting and related activities must not lead to any potential hazard to the ecosystem and the indigenous community's existence and survival over there.

3.16.8 PRIOR INFORMED CONSENT

The idea of prior informed consent is a notion closely connected with Traditional Knowledge right from the inception of CBD. This concept is kept in the CBD to make certain that the consent of the indigenous people and the local community is taken before the resources are sought to be accessed and utilized. It is a precondition for bio-prospecting and the consequent invention. It is also the required step preceding to the benefit sharing agreement. However, CBD fails to define the term, 'prior informed consent.' a lot of justifications have given for not defining the term in the convention. Amongst them one view says that the degree of knowledge may vary depending on the people and the material in question. Another justification for not defining the degree of understanding of the people is that the sometimes indigenous people may not give their consent so simply if they are aware of the monetary benefits expected from using their resources. However, the absence of

definition and conditions for a legally valid prior informed consent is injurious to the real interest of the TK holders.

There are so many grey areas and disagreements about the concept. First and foremost, the failure to define the expression gives the opportunity for misuse by the bio-prospectors. Therefore, there should be apparent guidelines as to the contents of ‘fully informed prior consent.’ The necessities to make the consent fully sufficient must be thorough and clarified. There should also be stress on the degree and scope of information that is to be provided for getting the consent.

Though, the UN Declaration also mentions for free and informed consent but there is no clarity as to what amounts to a “free” and “informed” consent. It is uncertain whether the information should relate to the potential future commercial benefits to the user of the knowledge or the potential benefits of continuing to keep the knowledge a secret. From the accessible legal literature on the subject, it is ambiguous whether the indigenous people should be informed about the likelihood of taking an intellectual property right, more or less analogous to a monopoly right to a certain degree, over their resource before the resources are sought to be accessed and utilized.

There is also an endeavor to describe and elucidate the concept PIC as the consent from the government. There should be unambiguous provisions, though with governmental participation it will be the consent of the related local and indigenous communities who are the holders of resources and Traditional Knowledge. yet again, in relation to the free and informed consent, in a community setting, free consent may require consent of the whole community or consent from a person who has the customary authority to represent the entire community. Hence the definition of free consent will

not only place the community at a better position in the negotiation process but it will also eliminate many issues at a later period.³⁹⁹

Improbability also exists with reference to partial or false information which a bio-pro prospector may give. The CBD has not made clear provisions for any future course of action in incidences, where information was not received with consent. Statutorily invalidating information when the crux of the information has already been made public or known by virtue of a patent application is neither a deterrent nor a protective mechanism.⁴⁰⁰

3.16.9 CONTROL OF ACCESS TO BIOGENETIC RESOURCES AND ASSOCIATED TRADITIONAL KNOWLEDGE

Controversies in access to genetic resources and to related Traditional Knowledge is not a new concern in itself. Access regimes have been developing in a very wide manner because of the augmented cost attributed to genetic resources and Traditional Knowledge in the age of genetic engineering. Intellectual property protection, in areas like genetic engineering, is frequently connected with genetic resources used in the product or process or the knowledge used in the product or process. Similarly, R&D in pharmaceutical industry is mostly dependent on the bio-resources and allied Traditional Knowledge. This has resulted into the development of progressively more complex and contentious legal frameworks pertaining to the rules that should govern access to genetic resources and allied knowledge.

399. For instance, a research from blood samples of members of Soloman Island showed a strain with immunity to a virus and gave raise to a drug for which a US Patent was applied. The indigenous people who have become aware of the market potential of the drugs were demanding compensation for the samples. The donee company argued that the blood and the spleen were given with consent. However, the extent of information given to the donor was never known, nor was the islanders aware of the commercial benefit the donee multinational would obtain in the future. In any case, had the donor known the full potential of his donation, he would have had a better bargaining power.

400. Available at <https://www.law.washington.edu/casrip/symposium/.../Srividhya.pdf> (Accessed on 12-11-12)

The issue of access to genetic resources and to Traditional Knowledge, therefore, mainly concerns the circumstances under which potential users can access the resources or knowledge they need.

Access regime is normally partitioned into two separate classes. Firstly, there is the issue of transborder access which is an issue related to international law. Also, there is the question of domestic access which concerns the conditions under which users can get access to resources and learning held by Traditional Knowledge holders. Issues concerning access emerge both at the global level where they concentrate generally on North-South relations and at the national level where they concern the rights or unlucky deficiency thereof that people and groups need to control access to their resources and knowledge. In international law, the subject of access is one subset of more extensive issues identified with state sovereignty. At the national level, the access regime is characterized as imperative not just as a marker for benefit imparting course of action additionally indicating all the more comprehensively, the sort of control and the privileges of proprietorship or nonappearance thereof that holders of biological resources and customary information can attest. From the perspective of international law, states have been given the right to control access to their resources. The situation under both the CBD and the PGRFA Treaty is that nations have sovereign rights over their biological resources as well as their plant genetic resources for food and agriculture.⁴⁰¹

However, sovereign rights are affirmed with particular duties to facilitate access to resources. In other words, Nations have the right to control the access to their resources but they should not establish legal framework as

401. Article 10(1), International Treaty on Plant Genetic Resources for Food and Agriculture, Rome, November 3, 2001.

to deny access to their all natural resources. The existing legal structure therefore seeks to promote exchanges of biological and plant genetic resources. One of the reasons which drove the international community to concede to the states' obligation to facilitate access is that most countries are very much inter-dependent with regard to plant genetic resources for food and cultivation. This is also the main reason for most countries agreeing to advance a system built not absolutely on sovereign control but also on exchanges.

Access can capture diverse forms when it is put into practice. In the circumstances where resources are held *ex situ*, the major concern is to formalize the conditions of access of the user. Access is a very complex issue where resources are held *in situ*. In this situation, bio-prospecting encompasses all activities connected to the search and gathering of biological resources, the use of information on the subject of traditional uses of the biological resources and also research towards commercial utilization. The control of access at the worldwide and national levels is a step forward from the perspective of asserting control over resources and knowledge by nations and holders themselves.

In the backdrop of this, the mutual consent necessity in the welfare contract shows that, if communities associate high values with their resources, both tangible and intangible, they won't need to contract away such resources. This indicates that in exceptional circumstances the community can regulate and even deny access to their resources. A stringently regulated access regime provides the nation more efficient control over exchange of resources outside the nation and also likely to discourage some bio-prospectors who may discover the conditions too rigorous. A stringently regulated regime also has the potential to give more shields to holders of resources and knowledge but

this would take place only if the national legal framework establishes for efficient control by original holders of Traditional Knowledge. Further, a well regulated regime of access also gives the nation, more control over biodiversity conservation and use policies. On the other hand, more liberalized approach to access is likely to boost bio-prospectors' interests in accessing resources and knowledge. Though it may yield monetary benefits for the nation but it is likely to further reduce the control that the original holders have with reference to their Traditional Knowledge.⁴⁰² In practice, access must be based on mutually agreed terms and on the prior informed consent of the state of origin.⁴⁰³

Efficient control of access to bio genetic resources has been a subject matter of international debates. CBD provides mechanism for appropriate access to genetic resources but it does not clarify what is 'appropriate.' In addition, the CBD has acknowledged the sovereign rights of countries on their biological and genetic resources. The nations those are rich with biological and genetic resources and related Traditional Knowledge must create appropriate mechanism to control the access to their natural resources. In any case, care must be taken to guarantee that there will be no over control restricting total access and impeding biotechnology and other potential commercial enterprises. There should be an adjusting approach between control over resources and benefit sharing. The guarantee of property rights over Traditional Knowledge is not only identification, recognition and benefit sharing for communities, apart from incentive it is also a reward for biodiversity conservation. But control over resources is notional and imperfect if exchange of the resources is not achievable or is somehow halted.

402. A Damodran, "Economics and Policy Implications of National Biodiversity Legislation," *Economic & Political Weekly*, 38/49, 2003, p. 5201.

403. This often takes the form of a material transfer agreement.

3.16.10 AGREEMENTS FOR BENEFIT SHARING

The medical companies' lots of times base their products mostly on medicinal plants and Traditional Knowledge. In the United States of America, it is estimated that nine out of ten prescription drugs used are based on natural compounds from plants, fungi, animals, and micro organisms, which is solely based on biodiversity.⁴⁰⁴ It is also projected that the aggregate market value of plant-based medicines sold in OECD countries was US\$43 billion.⁴⁰⁵

The holders of Traditional Knowledge are, often, poor and indigenous people. However, in most of bio-prospecting incidences, the Traditional Knowledge holders and custodians of related resources did not get any portion of huge sale proceeds. On the opposite side, the developing nations which house Traditional Knowledge and related biogenetic resources were required to engage in expensive legal disputes to retain their rights over their Traditional Knowledge. For example, India had to pay out millions of dollars for revocation of 'neem' and 'turmeric' related patents by USA.

Benefit sharing is a comparatively new concept which has been evolved as a result of the hastily changing paradigm relating to claims over biogenetic resources and Traditional Knowledge. Benefit sharing is the reaction which has been agreed to the fact that custodians of biogenetic resources and Traditional Knowledge are not given rights to prevent exploitation of their resources and knowledge but only rights to impose conditions on access to these resources by others. Thus, benefit sharing has been developed as an indirect means for recognition and incentive which the

404. President's Committee of Advisers on Science and Technology (PCAST), Panel on Biodiversity and ecosystems, *Teaming with Life: Investing in Science to Understand and Use America's Living Capital*, Washington, D.C., PCAST, 1998, p. 5.

405. Kamil Idris, "Intellectual Property a Power Tool for Economic Growth", p. 245, quoting Principe, 1989, Available at http://www.wipo.int/about-wipo/en/dgo/wipo_pub_888/pdf/wipo_pub_888_chapter_7.pdf, (Accessed on 03-01- 11).

Traditional Knowledge holders can receive when their knowledge forms the source for product or process protectable under present intellectual property rights. Benefit sharing is the compensation device which has been evolved as an extra indirect control mechanism that checks and regulates the access regime. It is based on the compensatory liability approach which seeks to provide for some form of equitable compensation to TK holders for the use of their TK.⁴⁰⁶

On the other side, in the current regime of biotechnology, it would be mere ridiculousness to put absolute ban on inventions based on TK. Moreover, the source countries and the concerned traditional and indigenous local communities must get their share arising out of appropriation of their knowledge and resources which they have conserved and developed over years and generations. In the existing intellectual property regime, which does not gives protection to farmers; breeders or Traditional Knowledge holders, there must be a compensation system to give at least an indirect recognition of their contributory role to technological advancement and new lines of investment.

In this context, it would be sensible and most cost effective, than to take legal action, to develop legal mechanism for acknowledgment, recognition and protection of Traditional Knowledge including system for benefit sharing.

For that reason, after the conclusion of CBD and the Plan of Implementation generated from the World Summit on Sustainable Development (WSSD) in 2002, the different mechanisms for benefit sharing are of the main focus of international negotiations concerning TK. The

406. WIPO/GRTKF/IC/7/6, Available at <http://www.wipo.int/> (Accessed on 03-05-13).

principle of benefit sharing says that a fair and equitable share of the benefits arising from exploitation of TK should be reached to the TK holders.

In general, benefit sharing is a device which has been discovered worthy to developed and developing nations however for mostly distinctive reasons. For nations of origin, benefit sharing has proven to be until currently a way through which governments can obtain more influence towards other nations and towards custodians of biological resources and Traditional Knowledge. Benefit sharing has the advantage of giving rights to original holders and thus proving a role for the state in managing the resources and the compensation that is received. *Kani-TBGRI Kerala Model ABS* sets one of the best illustrations to quote for benefit sharing which really disseminated benefits with the tribal community for giving leads in the bio-prospecting. It was an inadvertent revelation made by the researchers of TBGRI amid the Ethno medico-Botanical investigation to the Agastyar valley ranges of Trivandrum, Kerala, India, which is placed in the southern most part of the Western Ghats that the plant, *Trichopus zeylanicus* (*Arogyapacha*), abundant in that area, has restorative and anti-fatigue properties. The discovery of the exclusive property of the plant was based on the leads gained from information by the Kani tribe community who accompanied the group as porters and guides. Kanis are usually a nomadic community, but the majority of them are settled now for long time. Their population is 16,181 which is about 1.85 of the total population of the district.⁴⁰⁷ The young fruits of ‘*Arogyapacha*’ are eaten fresh to remain healthy and agile by Kanis during their long trekking trips in the forest for procuring their living needs. Ethnopharmacological screening of *Arogyapacha* exposed a variety of activities such as anti-fatigue, anti-tumour, anti-gastric ulcer, anti-stress, anti-

407. Census of Government of India 1991.

allergic, anti-oxidant, adaptogenic, aphrodisiac, immuno-modulatory and hepatoprotective.

There are evidences which show that there have been researches which have resulted in to bioprospecting and development of a new drug discovery. Same happened in the case of *jeevani drug* which was based on the fundamental principle of Ayurveda. Four patents were filed against the new drug and out of which two were granted. Benefit sharing was negotiated by the government in this case. This is popularly known as ‘TBGRI Kerala model for benefit sharing’. The TBGRI involved the discussion with tribal group of people and developed understanding for benefit sharing.

Various concerned and interested parties were consulted with and then know how of the “*jeevani*” has been transferred to the Aryavaidya Pharmacy through a license of manufacturing. This license has been granted for the period of seven years for a sum of Rs ten lakhs. CSIR has framed norms for the transfer of technology which were adopted in this technology transfer. In this transfer a provision for payment of 2% royalty has been kept at ex-factory sales price and in the agreement 50% amount of the license fee and royalty has been ensured to share with the Kani tribes who had the unique information.⁴⁰⁸ Kani tribes got a trust registered i.e. ‘Kerala Kani Samudaya Kshema Trust’, with the assistance of TBGRI and the benefits gained by the transfer of technology and royalty were deposited to the Trust’s account. Afterwards, in discussion with TBGRI, the executive committee of the trust had determined to give the three Kani tribes who furnished the information

408. T.P. Sreedharan, “Biological Diversity of Kerala: A survey of Kalliasseri Panchayat, Kannur District”, Discussion Paper No. 62; Kerala Research Programme on Local Level Development, Centre for Development Studies, Thiruvananthapuram, 2004. Also see, C.R Bijoy, “Access and Benefit Sharing from the Indigenous Peoples’ Perspective: the TBGRI-KANI Model”, Law Environment and Development Journal, 3/1, 2007, p.1to22.

about Arogyapacha. TBGRI model of Benefit sharing was much-admired all over the world and was given UN Equator Initiative Award.

According to CBD, benefit sharing must be fair and equitable. It explains benefit sharing as fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding. The CBD advises that benefit sharing arrangements can be utilized to put into practice provisions of prior informed consent and equitable sharing of benefits from use of biological resources. However, the experiences gathered from most of the benefit sharing models created with, so far, clearly indicates that they have not been successful in satisfying the objectives of CBD. Although the notion is clear in principle but when it is put into practice it brings obscurity in the route of implementation. Benefit sharing now has become a notion that has been structured in various means and ways in different nations. So far, very little of the modest benefits effectively claimed by nations for access to their genetic resources and connected Traditional Knowledge have in reality made its way to the Traditional Knowledge bearing communities.

The disappointment of various benefit sharing agreements illustrates this point at hand. Over the last decade, a number of pharmaceutical companies indulged in pharmaceutical prospecting have developed models with the indigenous and local communities for benefit sharing from successful drug discovery. The *Shaman Pharmaceuticals model* is a famous example amongst these models.⁴⁰⁹ The research project of them was tremendously time

409. Roger Alex Clapp categorically analyzes Shaman's failure to market new pharmaceutical products and its ultimate bankruptcy. Roger Alex Clapp notes that risks inherent in drug development, company risk associated with Shaman's drug development strategy, and

consuming and very costly. In addition to this, the risk involved in clinical trials and R&D in drug development resulted in the bankruptcy and closure of Shaman Pharmaceuticals.

Even in the Kani-TBGRI Kerala model, however the research project resulted in the discovery of a drug named *Jeevani* and a decent remuneration to the TK holders critics still find several problems with the model. The problems are mainly related to (i) access to the plant resource, (ii) market establishment, and (iii) in balancing competing claims of representation for benefit sharing and calculation of shares in distributing the benefits from royalties and license fees etc. Still there are unresolved issues.⁴¹⁰

In many other models, though several leads have been obtained, the commercial drugs are yet to be completely developed. Pharma companies feel that there are also very high transaction costs in obtaining consent and collection of samples from indigenous peoples and in further clinical trials for R&D. Hence any system for benefit sharing needs to take account of all these issues.

Despite the broad acceptance of the notion of benefit sharing which now prevails at least at the international level, there remain major debates concerning the exact benefits that should be shared, under what circumstances they should be shared and in which fields they should be taken place. One of the major problems is that it is difficult to conceive of benefit sharing exclusively at the national level. This is due to the fact that countries of origin

technological change in the industry all contributed to its failure. See, Roger Alex Clapp, "Drowning in the Magic Well: Shaman Pharmaceuticals and the Elusive Value of Traditional Knowledge," *The Journal of Environment & Development*, Vol. 11, No. 1, 2002, p. 79-102

410. The commercial value of *Jeevani* is estimated in the range of US \$ 50 million to 1 billion. However, the Kani tribes did not receive royalties correspondingly. See, Devinder Sharma, *Selling Biodiversity, Benefit Sharing is a Dead Concept*, Available at <http://www.mindfully.org/WTO/2004/Selling-Biodiversity-Sharma3may04> (Accessed on 12-09-11).

are not in a position to impose extra-territorial measures on user countries. Therefore, an effective benefit sharing system for transboundary transactions either must involve an international law framework or must be coordinated between all countries. Countries of origin can take measures at the point of access of the resources, but it is often difficult to judge at the outset what exact use will be made of the resources and what benefits will eventually be derived. Further, even when an estimate is made, if respect for benefit sharing arrangement is not made a condition of patentability or commercialization of derived products; it would become much more difficult to enforce benefit sharing arrangements.

3.16.11 VALUATION OF THE MONETARY BENEFITS

The other difficulty regarding benefit sharing is the valuation of the financial gains. A essential aspect of valuing any salable resource is the right of action available on this resource and how these rights of action are to be implemented.⁴¹¹

The value of Traditional Knowledge can be calculated and the monetary benefits can be set only on the ground of non-market and market use of the Traditional Knowledge. The Traditional Knowledge is a type of basic research, which on its own commands no business value, but in turn, receives its value from the value of future inventions facilitated by it. There are two concepts of value in the context of Traditional Knowledge: market and non market values. In the first case, the market value of Traditional Knowledge is decided when people outside the community that traditionally posses the rights over Traditional Knowledge use the knowledge to build up further products or cost-effective processes. One is the value of Traditional

411. Horald Demstz, "Towards a Theory of Property Rights," Journal of Law and Economics, Vol. 7, 1964, p.11

Knowledge gained from the traditional use of the resources and related knowledge within the local framework of the community and the other is resulting from its use outside. These may be roughly classified as the non-market and market use of the Traditional Knowledge concerning the biological resources.

The scope for sequential innovations must not be ignored while setting up the monetary benefits. There is generally a sequence of innovations based on Traditional Knowledge. Pharmaceutical and bio-engineered products generally go through a sequence of improvements after the basic research and 'primary innovation'. The scheme of sequential innovations, which include numerous stages of innovation over the basic research, is frequent in the genetic engineering and biotech industries. For illustration, the therapeutic properties of the drug *Jeevani* in Kerala could in turn serve as the basic knowledge for advance and improved drugs or cost efficient processes. There can be endless sequence of quality improvements.

Assessment of monetary benefits should also take into consideration the social value of Traditional Knowledge. The social importance of the basic traditional or indigenous knowledge innovation is bigger than the private market cost of the knowledge as it is compounded by the value of the subsequent innovations also. The social significance of Traditional Knowledge further includes any costs borne by the holders due to its loss of Traditional Knowledge on commercial exploitation. Because, commercial use of the knowledge, closely held within a community may entail a loss to the community in terms of changes in access to and the indigenous use of the resources and knowledge. Similarly, it also includes any profits to the community that accrue from sharing of the profits from later innovations made, thus, in addition to the market value of the basic innovation, the social

value of Traditional Knowledge includes the market value of the successive innovation. Given the collective nature of Traditional Knowledge innovations the value of Traditional Knowledge is compounded by the value of upcoming innovations that are developed based on the existing knowledge. The traditional medicinal knowledge, once received by pharmaceutical industries becomes the base for developing further commercial drugs. The notion of social value of innovation captures the added value generated from collective innovations.

On the basis of these assessment royalties are to be settled. Short time assessment of the economic benefits of the ending product will not be much beneficial. What is needed is a constant assessment and estimation of the product in the overall market and premium out of the performance. The benefit sharing agreement should exist as long as the intellectual property protection on the product will last. There should be share of each and every profit that discoveries may generate.

3.16.12 NON MONETARY BENEFITS

Another significant concern is that of the ‘other non monetary benefits’ in the agreement to benefit sharing (ABS). The benefits may always not need to be shared in terms of money. It can be shared even in terms of ‘kind’. As per the requirements of the TK holders and indigenous local community transferring the resources or information, they can have the following demands in the ABS:

- a) transmission of technology
- b) share as partners in the invention
- c) involvement in all stages of bio-prospecting
- d) involvement in sample collection
- e) local employment chances

- f)** improving of their infrastructures
- g)** employment opportunities overseas subsequent to bio-prospecting, and
- h)** suitable funding schemes

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CHAPTER IV

POSSIBLE INTELLECTUAL PROPERTY PROTECTION OPTIONS FOR TRADITIONAL KNOWLEDGE

This Chapter discusses about the various possible protections which are available to the Traditional Knowledge in the existing IPR regime which are as follows:

4.1 PATENTS

The patentability of any invention lies in the triple test of (a) novelty, (b) inventive step and (c) industrial utility. These are the globally accepted pre-requisites for patents. TRIPS agreement 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.⁴¹² Correspondingly, the Indian Patent Act,

412. Section 5: Article 27. 1 of TRIPS runs as follows: Subject to the provisions of paragraphs 2 and 3, 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. Subject to paragraph 4 of Article 65, paragraph 8 of Article 70 and paragraph 3 of this Article, patents shall be available and patent rights enjoyable without discrimination as to the place of invention, the field of technology and whether products are imported or locally produced. 2. Members may exclude from patentability inventions, the prevention within their territory of the commercial exploitation of which is necessary to protect ordre public or morality, including to protect human, animal or plant life or health or to avoid serious prejudice to the environment, provided that such exclusion is not made merely because the exploitation is prohibited by their law. 3. Members may also exclude from patentability: (a) diagnostic, therapeutic and surgical methods for the treatment of humans or animals; (b) plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes. However, Members shall provide for the protection of plant varieties either by patents or by an effective sui generis system or by any combination

1977 defines ‘invention’ as a new product or process involving an inventive step and capable of industrial application.⁴¹³

4.1.1 CONCEPT OF INVENTION VIS-À-VIS TRADITIONAL KNOWLEDGE

To entitle for a patent the invention must fall under the category of patent eligible subject matter. Section 2 (1) (j) treats as inventions any new product or process involving an inventive step and capable of industrial application. All inventions are not patentable though they may otherwise satisfy all the conditions of patentability. A patent will be granted for an invention if the subject matter is open for patenting, or to put it in other words, if the invention does not fall under an excluded category. Therefore, the question whether there is an invention is a question of fact in each case.⁴¹⁴

Chapter 2 of the Patent Act exclusively deals with inventions that are not patentable. Section 3⁴¹⁵ and section 4⁴¹⁶ declare certain inventions as not

thereof. The provisions of this subparagraph shall be reviewed four years after the date of entry into force of the WTO Agreement.

413. Section 2 (j) of the Patent Act, 1977 as inserted by the Patent Amendment Act, 2002

414. J. K. Das, Intellectual Property Rights, Kamala Law House, Kolkata, 2008, p. 258.

415. Section 3: What are not inventions: The following are not inventions within the meaning of this Act, - a) an invention which is frivolous or which claims anything obvious contrary to well established natural laws; b) an invention the primary or intended use of which would be contrary to law or morality or injurious to public health; c) the mere discovery of a scientific principle or the formulation of an abstract theory; d) the mere discovery of a new form of a known substance which does not result in the enhancement of the known efficacy of that substance or the mere discovery of any new property or new use for a known substance or of the mere use of a known process, machine or apparatus unless such known process results in a new product or employs at least one new reactant. Explanation.—For the purposes of this clause, salts, esters, ethers, polymorphs, metabolites, pure form, particle size, isomers, mixtures of isomers, complexes, combinations and other derivatives of known substance shall be considered to be the same substance, unless they differ significantly in properties with regard to efficacy;". e) a substance obtained by a mere admixture resulting only in the aggregation of the properties of the components thereof or a process for producing such substance; f) the mere arrangement or re-arrangement or duplication of known devices each functioning independently of one another in a known way; h) a method of agriculture or horticulture; i) any process for the medicinal, surgical, curative, prophylactic or other treatment of human beings or any process for a similar treatment of animals or plants to render them free of disease or to increase their economic value or that of their products. j) plants and animals in whole or any part thereof other than micro-

patentable inventions within the meaning of the Act. Section 3 (p) excludes from patentability an invention which, in effect, is Traditional Knowledge or which is an aggregation or duplication of known properties or traditionally known component or components.

Besides to this, sections 25 (1) (d) and 25 (2) (d) state that if the subject of any claim of the complete specification is not an invention within the meaning of the Act, or is not patentable under the Act, then it can be opposed on that ground. Correspondingly, sections 64 (1) (d) permits revocation of a patent if the subject of any claim of the complete specification is not an invention within the meaning of the Act.

A combined reading of these sections reiterates that there can be no patent protection in the country on Traditional Knowledge per se or which involves traditionally known component or components.

4.1.2 CRITERION OF NOVELTY VIS-À-VIS TRADITIONAL KNOWLEDGE

Novelty is the *sine quo non* of patents. Though the Indian Patent Act, 1970 does not define the term ‘novelty’, the Patents (Amendment) Act, 2005⁴¹⁷ delineates the concept of novelty when it defines the term ‘new invention’ under section 2 (l) as under:

organisms but including seeds, varieties and species and essentially biological processes for production or propagation of plants and animals; k) a mathematical or business method or a computer programme per se or algorithms; (I) a literary, dramatic, musical or artistic work or any other aesthetic creation whatsoever including cinematographic works and television productions; (m) a mere scheme or rule or method of performing mental act or method of playing game; (n) a presentation of information; (ó) topography of integrated circuits; (p) an invention which, in effect, is Traditional Knowledge or which is an aggregation or duplication of known properties or traditionally known component or components.

416. Section 4: Inventions relating to atomic energy not patentable: No patent shall be granted in respect of an invention relating to atomic energy falling within sub-section (1) of Section 20 of the Atomic Energy Act, 1962.

417. No. 15 of 2005.

“New invention means any invention or technology which has not been anticipated by publication in any document or used in the country or elsewhere in the world before the date of filing of patent application with complete specification, i.e. the subject matter has not fallen in public domain or that it does not form part of the state of the art.”

Novelty lies in the non-disclosure of the invention to the public. It presupposes that there should be no prior knowledge of the invention with the public. It requires the secrecy of the information for the purpose of claiming novelty. An invention may be anticipated either by (a) prior publication or by (b) prior use. Section 13 of the Act requires the patent examiners to conduct search for anticipation.⁴¹⁸

The prior publication includes (i) the publication of the information through the patent claims already filed before the authorities anywhere in the world or (ii) the existence of the information in any publication or document

418. 5 Section 13 reads as under: Search for Anticipation by previous publication and by prior claim. The Examiner to whom an application for a patent is referred under section 12 shall make investigation for the purpose of ascertaining whether the invention so far as claimed in any claim of the complete specification – (1) has been anticipated by publication before the date of filing of the applicant’s complete specification in any specification filed in pursuance of an application for a patent made in India and dated on or after the 1st day of January, 1912; (2) is claimed in any claim of any other complete specification published on or after the date of filing of the applicant’s complete specification, being a specification filed in pursuance of an application for a patent made in India and dated before or claiming the priority date earlier than that date. (2) The Examiner shall, in addition, make such investigation as the Controller may direct for the purpose of ascertaining whether the invention, so far as claimed in any claim of the complete specification, has been anticipated by publication in India or elsewhere in any document other than those mentioned in sub-section (1) before the date of filing of the applicant’s complete specification. (3) Where a complete specification is amended under the provisions of this Act before it has been accepted, the amended specification shall be examined and investigated in like manner as the original specification. (4) The examination and investigations required under section 12 and this section shall not be deemed in any way to warrant the validity of any patent, and no liability shall be incurred by the Central Government or any officer thereof by reason of, or in connection with, any such examination or investigation or any report or other proceedings consequent thereon.

available for public examination irrespective of whether any member of the public including the person claiming the invention has read it or not.⁴¹⁹

The prior use is the use of the information in the course of the trade by a person or is within the common knowledge of the public or those involved in the trade.⁴²⁰ That is to say that if the product based on the invention is already in the market or in case of process; it is in use for the manufacture of a product.⁴²¹

Sections 26 to 34 of Chapter VI of the Patent Act enlist the situations in which the invention is not deemed to be anticipated. Therefore, if exceptions are not applicable, then only those set of information which are in the form of a product or process not available in the public domain are qualified for patent protection.

Further, even after the examination of the application, a patent can be opposed (i) under section 25 (1) (d) after the publication of the application but before granting the patent and (ii) under section 25 (2) (d) after grant of patent but before the expiry of one year after the publication of grant of patent on the ground that the invention or any claim of the complete specification was publicly known or publicly used in India before the priority date of that claim.

Section 64 (e) indicates that a patent can be revoked after it is granted, if any claim in the complete specification is not new, having regard to what was publicly known or publicly used in India before the priority date of the claim or what was published in India or elsewhere in any of the document referred in section 13.

419. Lalubhai Chakubhai Jariwal v. Chimanlal & Co., AIR 1936 Bom. 99 and Monsanto Company v. Coramandal Indug Products (P) Ltd., AIR 1986 SC 712.

420. Automatic Coil Winder etc. Co. Ltd. v. Taylor Electrical Instruments Ltd., [1944] RPC 41.

421. Indian vacuum Brake Co. Ltd. v. E. S. Laurd, AIR 1926 Cal. 152.

While examining Traditional Knowledge in the light of patent requirements, it is evident that almost all categories of TK are in the public domain. The requirement of novelty is defeated in as much as the common public is aware of the information. With reference to TK, at least a particular segment of the local or indigenous community is aware of the information and in most cases the knowledge is in the continuous use of the community. On the basis of the statutory requirement of novelty one can categorically argue that majority of the existing products and processes based on Traditional Knowledge will not satisfy the test of novelty. The lack of novelty will disqualify the products based on the knowledge to be treated as invention for the purpose of patent protection.

4.1.3 CRITERION OF INVENTIVE STEP VIS-À-VIS TRADITIONAL KNOWLEDGE

The second requirement for obtaining a patent is ‘inventive step’. This is a new term substituted for the old term of non-obviousness. The inventive step is defined “as a feature of an invention that involves technical advance 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.”⁴²²

Sections 25(1) (e) and 25(2) (e) state that a patent can be opposed on the ground of lack of inventiveness. It says that any person may represent to the Controller of Patents against the grant of patent on the ground that the invention claimed in any claim of the complete specification is obvious and clearly does not involve any inventive step, having regard to the matter published or having regard to what was used in India before the priority date

422. Section 2 (ja) of the Patent Act, 1977 as inserted by the Patent Amendment Act, 2005.

of the applicant's claim. Section 64 (f) further makes it a ground for revocation.⁴²³

The question of obviousness involves asking the question whether the invention would have been obvious to a non-inventive worker in the field equipped with the common general knowledge as at the priority date.⁴²⁴ The requirement of inventive step is to demonstrate that the invention is the creation of the individual or individuals claiming monopoly. This is to ensure that substantial intellectual labour of the inventor is involved in the creation of the new invention. It is a question of law based on underlying facts.⁴²⁵ So the test applied by the courts is to examine whether there is any application of inventive faculty of the inventor.⁴²⁶ The quantum of application of independent thought, ingenuity and skill of the inventor are the matter of inquiry in this regard.⁴²⁷ This is achieved by asking whether the invention is obvious to persons skilled in the same field. The standard applied is that of a normally skilled but unimaginative person in the art at the relevant time.⁴²⁸ This presupposes the demonstration of the individual contribution of the inventor for claiming patent for the new invention. Correct assessment of inventiveness requires assessment not by reference to specific single items of prior art but by reference to the entire knowledge resulting from the entire prior art for the ordinary expert in the art.

423. Section 64 (f) of the Patent Act, 1970 provides that a patent can be revoked on the ground that that the invention so far as claimed in any claim of the complete specification is obvious or does not involve any inventive step, having regard to what was publicly known or publicly used in India or what was published in India or elsewhere before the priority date of the claim.

424. Elizebeth Verkey, *Law of Patents*, Eastern Books Company, 1st Ed., 2005, p. 121.

425. *In re Frank S. Glaug*, 283. F. 3d 1335 (Fed. Cir. 2002).

426. *M/s. Bishwanath Prasad Radhe Shyam v. M/s. Hindustan Metal Industries*, AIR 1982 SC 1444; *Windsurfing International Inc. v. Tabur Marine (Great Britain) Ltd.*, [1985] R.P.C. 59.

427. *Killick v. Pye*, [1958] R.P.C. 366.

428. *Windsurfing International Inc. v. Tabur Marine (Great Britain) Ltd.*, [1985] R.P.C. 59. For details see Robert P. Merges, *Patent Law and Policy Cases and Materials*, The Michie Co., Virginia, 1992, p. 379- 503.

It is possible to have more than one individual as inventor in case of joint inventions. Thus, it is not the availability of novelty but the existence of individual contribution that holds the key factor for claiming patent protection. This requirement thus distinguishes the prior art from the new art and also recognizes the intellectual labour of the individual.

One of the significant features of the Traditional Knowledge is the fact of it being passed on to the present generation by the previous one. This gives a *prima facie* impression that the present custodians of this knowledge are not the creators but only the successors in interest of the earlier creators. It neither involves technical advance as compared to the existing knowledge or any economic significance. It is, thus, obvious that the present claimants have not contributed any independent thought, ingenuity or skill to establish a valid patent claim. In this context the existing Traditional Knowledge will remain as a prior art rather than a new art for patent protection. It is obvious to a person skilled in the art. This also negates the second condition for claiming patent for TK.

4.1.4 CRITERION OF INDUSTRIAL APPLICABILITY VIS-À-VIS TRADITIONAL KNOWLEDGE

An invention, to be patented, must be capable of industrial application. The concept of ‘capable of industrial application’ is defined in section 2 (1) (a) (c) of the Patent Act. Capable of industrial application in relation to an invention means that the invention is capable of being made or used in an industry.⁴²⁹ Additionally, section 64 (1) (g) provides for the revocation of an invention if the claim in the complete specification is not useful.

The origin and development of patent system from the very inception is linked to the industrial growth and economic development of a nation. So it

429. Substituted by Act 38 of 2002.

has always been the underlying principle of patent system that only inventions that are useful to the society are recognized for patent protection. The concept of utility of the invention is limited to the examination of its capability of being put into practice by following the steps described in the patent claim. The standard for patent examination is not commercial success of the invention. It is sufficient if the invention can be worked in the laboratory by following the steps described by the inventor.⁴³⁰ It is the industrial application rather than the industrial success of the invention that is needed for patent protection. Only inventions that are frivolous or injurious to the society are considered as not useful to the society.⁴³¹

One of the positive aspects of the Traditional Knowledge is its use to the society. It is only those knowledge that are found to be of social use that have been passed on to the next generation. It is the proven success of the information that qualifies for its long existence and use in the society as Traditional Knowledge. So it may always be possible to demonstrate use of TK.

4.1.5 INVENTIONS INVOLVING LOCAL INDIGENOUS KNOWLEDGE

Sections 25 (1) (k) and 25 (2) (k) indicate that a patent can be opposed if the invention or any claim in the complete specification is anticipated having regard to the knowledge, oral or otherwise, available within any local or any indigenous community in India or elsewhere. Section 64 (q) provides that a patent can be revoked if the invention or any claim in the complete specification is anticipated having regard to the knowledge, oral or otherwise,

430. Lane-Fox v. Kensington and Kingsbridge Electric Lighting Co. Ltd., [1892] 3 Ch. 424 and M/s. Bishwanath Prasad Radhe Shyam v. M/s. Hindustan Metal Industries, AIR 1982 SC 1444.

431. Bedford v. Hunt, 3 F. Cas. 37 and Reliance Novelty Corp. v. Dworzek, 80 F. 902 (N.D. Cal. 1897).

available within any local or any indigenous community in India or elsewhere. Therefore, the involvement of indigenous knowledge of the local or indigenous community disentitles an invention from patentability.

It is apparent from the above analysis that Traditional Knowledge does not fulfill the conditions of patentability and more over it is expressly excluded under section 3 of the Patent Act from patentability. Therefore, Traditional Knowledge, traditional innovations and traditional practices are not patentable subject matters in the scheme of the Patent Act, 1970.

Issues of patentability mostly arise with respect to traditional or folk medicines. Folk medicines include not only medicinal practices of indigenous people but their knowledge of traditional cures, the curing properties of herbs, leaves, and other treatments unknown to the rest of the world also. It also includes the genetic makeup of people who are immune from diseases thus far considered incurable.⁴³² Unfortunately, most traditional medicines in their natural form often do not qualify for patent protection. Although traditional medicines have many uses, they often fail to meet the novelty and inventiveness requirements of patent applications. However, there are some instances wherein traditional medicinal knowledge was given patent protection. WIPO refers to such a system of protection in the document titled the Protection of Traditional Knowledge: Outline of Policy Options and Legal Elements.⁴³³ It refers to the granting of patents for Chinese traditional medicine as an example of the fact that Traditional Knowledge can also be eligible for patent protection.

432. Roht-Arriaza, "Of Seeds and Shamans: The Appropriation of the Scientific and Technical Knowledge of Indigenous and Local Communities," *MICH. J. INT'L L.*, Vol. 17, 1996, p. 921-27.

433. WIPO Doc. WIPO/GRTKF/IC/7/6, Annex 1, paragraph 17

Carlos M Correa describes how patent can be wisely used for genetic resources and associated TK.⁴³⁴ It can be used for the protection of technical solutions that are industrially applicable and universally novel and involve an inventive step. For genetic resources and TK, patent may be taken out for products isolated, synthesized or developed from genetic resources, micro organisms and plants and animals or organisms existing in nature. Patent protection may also be obtained for processes associated with the use and exploitation of those resources, and also processes known to the native communities that meet the same conditions. All the results of biotechnology applied to genetic and biological resources, and also undisclosed techniques for obtaining practical results, could in principle be protected with patents.

It shows that if India can also devise some system akin to utility patents for protecting medicinal knowledge and practices embodied in traditional Ayurveda, Unani etc. and other traditional medicinal or treatment systems developed by the Indian communities and individuals, our rich traditional medicinal knowledge will be protected from misappropriation.

4.2 PETTY PATENT MODELS

Petty patents allow for protections similar to those of patents, but for knowledge consisting of a less-detailed inventive step.⁴³⁵ The knowledge must still meet the novelty and industrial application criteria. The term of protection for a petty patent is typically between four and six years, which is shorter than the term for the standard patent. The petty patent exists only in a few countries

434. Carlos M Correa, *Traditional knowledge and Intellectual Property, Issues and Options Surrounding the Protection of Traditional Knowledge*, Quaker United Nations Office, Geneva, 2001, p. 11

435. Kadidal, S., "Subject-matter Imperialism? Biodiversity, Foreign Prior Art and theNeem Patent Controversy," *IDEA: The Journal of Law and Technology*, (1997), 371-403. Onlineat: http://www.idea.piercelaw.edu/articles/37/37_2/9.Kadidal.pdf (Accessed on 22-11-14).

and is not mentioned in the TRIPs Agreement as a minimum standard for intellectual property protection. However some countries are pushing for the inclusion of petty patents in the TRIPs Agreement. Petty patents may be more suitable for TK, as TK is not typically documented in the same manner as Western science. Despite the fact that petty patents are not globally recognized as a minimal standard for intellectual property protection, some countries have enforced the mechanism as a way of protecting TK. For example, a type of petty patent is mentioned in Kenyan legislation in order to protect indigenous claims to traditional herbal medicine.⁴³⁶ Although the current application of petty patents is relatively small, their implementation at a broader level could serve TK as a viable intellectual property protection option.

4.3 PLANT PATENTS

The TRIPs Agreement requires all countries to adopt measures to protect new plant varieties. One form of protection for new plant varieties is the plant patent. Unlike European patent law, U.S. law provides for the granting of a patent to anyone who has invented or discovered and then asexually reproduced any distinct and new variety of plant. This includes cultivated sports, mutants, hybrids, and newly found seedlings, other than a tuber-propagated plant or a plant found in an uncultivated state. There are several inconsistencies in the plant patenting system, which may either be of benefit or present a threat to indigenous communities. First, there is a lack of a clear understanding or consistent approach to what is considered a new plant variety. Many indigenous communities have cultivated and maintained plant

436. Systems and National Experiences for Protecting Traditional Knowledge, Innovations and Practices, United Nations Conference on Trade and Development, Commission on Trade in Goods and Services, and Commodities Expert Meeting on Systems and National Experiences for Protecting Traditional Knowledge, Innovations and Practices, 2000, TD/B/COM.1/EM.13/2.

varieties over many generations. Therefore, are these plant varieties new or invented in the terms of the U.S. Patent Office? Probably not. But many new plant varieties are simply a slight modification to existing types of plants that were developed (cultivated) by indigenous communities, for example, the Mexican yellow bean mentioned earlier. So technically speaking, they were “invented.” But unlike inventing a new plant variety, new varieties could be “discovered” by a local community in the same manner that other plants, such as *ayahuasca*, were discovered. The requirements for a plant discovery are:

- its existence is not already known outside the community,
- it can be reproduced by means other than from being grown from a seed (asexually propagated), such as by the rooting of a cutting from the plant, and
- It must not be discovered growing in an uncultivated state, implying simply that if it was found growing freely in a field, the woods, mountain side, etc. This would suggest that it could have developed into its current state without any human involvement.

But, if the plant is discovered, for example, in someone’s garden, or within the boundaries of the community, this increases the odds that this plant variety probably developed with some form of human intervention.

4.4 PLANT VARIETY CERTIFICATES

Some countries additionally protect plant varieties in the form of a plant variety certificates. Only fifty countries currently belong to the International Convention for the Protection of New Plant Varieties (UPOV)⁴³⁷. This mechanism is used to protect the rights of breeders of sexually reproducing varieties of plants (reproducing by seed). Breeder’s

437. 14 International Convention for the Protection of New Varieties of Plants, Paris, as revised in 1991.

rights protect the commercial interests of the breeder so that economic incentives exist for continued breeding of new plant varieties. Unlike patents, plant variety certificates do not require the authorization of the breeder for use of the variety by others for research purposes. The criteria for a plant variety certificate are slightly different from those for a plant patent. To meet UPOV requirements, varieties must be:

- distinct from existing, commonly known varieties,
- sufficiently uniform,
- stable, and
- novel⁴³⁸

According to UPOV, distinctness is determined by the existence of distinguishing features of the plant variety when compared to any other variety existing as common knowledge at the time.⁴³⁹ The uniformity requirement is met when the plant variety, upon propagation, exhibits its distinguishing characteristics in a consistent manner.⁴⁴⁰ The stability requirement is met when the characteristics of the plant remain unchanged after repeated propagation.⁴⁴¹ The novelty requirement is met if the plant variety has not been sold prior to certain dates established in the UPOV Convention in relation to the filing date of the plant variety application.⁴⁴² It is important to note this particular definition of novelty in relation to plant variety certificates. Here, novelty pertains to the prior sale of the plant variety. UPOV is not the only legal mechanism for protecting new plant varieties. In fact, relatively few (only fifty) countries in the world currently support UPOV. Several other options for plant variety protection have been proposed

438. <http://www.upov.int/eng/brief.htm>, (Accessed on 15-01-14).

439. International Convention for the Protection of New Varieties of Plants, 1991, Art- 7.

440. *Id.*, Art. 8.

441. *Id.*, Art. 9.

442. <http://www.upov.int/eng/brief.htm>. , (Accessed on 15-01-14).

by developing countries that are not party to UPOV, but are still legally bound to provide plant variety protection under the TRIPs Agreement. For example, proposals for legislation in Nicaragua have included provisions that require ten unique characteristics in order to distinguish a variety as “distinct,” to exclude protection for “discovered” plants, and; not to extend plant breeder’s rights to plants used for food or sown directly by farmers. Zambia has cited the Convention on Biological Diversity (CBD) in developing its plant variety protection mechanism and states that any final legislation must recognize and reward indigenous innovation. India’s Plant Variety Protection Act (2001) declares that the rights of the farmer are superior to those of the breeder. The Plant Varieties Protection Act of Bangladesh (1998) states that a variety must have immediate, direct and substantial benefit to the people of Bangladesh⁴⁴³ and protects both community and farmers rights.⁴⁴⁴ These examples demonstrate that options other than UPOV can be established that effectively address the needs of Traditional Knowledge holders.

4.5 TRADITIONAL KNOWLEDGE REGISTRIES

Traditional Knowledge registries are official collections of documentation that describe Traditional Knowledge. Registries can be established and maintained either locally (within a community) or outside the community itself (external). With a locally maintained registry, the community may collectively decide what is to be included in the registry and what knowledge is to be shared and/or disclosed to people outside the community. External registries are maintained outside the community, often on the national or international level, by governments, non-governmental organizations, museums, or libraries. These registries can be collections of TK

443. Plant Varieties Act of Bangladesh, 1998, Article 7.

444. www.grain.org/publications/nonupov-en.cfm, (Accessed on 15-01-14).

specific to one particular community or to several communities. Local communities may have control over what is entered into the registry, but may not be responsible for the registry's maintenance. Distinguishing between local or external registries is at the discretion of the TK stakeholders. Registries can also be public or private.

Public registries place information in the public domain and serve as a form of prior art or *defensive disclosure*. A Defensive disclosure, by describing information in a printed publication or other publicly accessible medium, helps to establish prior art capable of preventing patents based on that information. Private registries, however, do not place knowledge in the public domain. Private registries can be effective as:

- protection mechanisms for TK in instances where a *sui generis* system is in place,
- preservation mechanisms when cultural and historic preservation is a goal, and;
- tools for access and benefit sharing agreements.

Since the information in a private registry is documented but is not in the public domain, it may not constitute prior art capable of preventing a patent based on the knowledge by an outsider. The knowledge in a private registry cannot prevent the approval of a patent under most IP systems unless it is considered prior art through a *sui generic* mechanism and disclosed to patent authorities. However, it may be possible to challenge and revoke a patent with knowledge documented in a private registry if patent law recognizes prior art not disclosed to public as is being admissible under a *sui generis* system. Re examination requests of patents can be both costly and time consuming. Also, the knowledge may need to be disclosed to the public if no *sui generis* protection mechanism exists that would prohibit its public

disclosure during re examination. Because the recognition and effectiveness of private registries varies from country to county, private registries are most effective as a mechanism for preservation of knowledge and as a tool for access and benefit-sharing agreements. A private registry can serve as a catalogue for knowledge that can be licensed to outside parties for research and product development. As a mechanism for cultural preservation, the private registry serves as a cultural library that documents and maintains TK belonging to a community and helps prevent its loss. A typical form of registry is a computer database. The Internet is an ideal location for public databases containing TK, where they can serve as a vehicle for *defensive disclosure* and are accessible to patent offices worldwide as a source of prior art. WIPO is in the process of compiling a list of TK-related databases for international patent offices and several large public databases collect TK as a means of defensive disclosure against the misappropriation of IPRs. The benefit of both public and private registries lies in their ability to prevent or revoke inappropriate claims of intellectual property rights. In order to be effective in this manner, it is essential that national patent offices are made aware of the public registry for use in prior art searches. The public registry has the additional benefits of negating the application of intellectual property rights on TK prior to patent approval and promoting free use of the knowledge in the public domain for everyone's benefit.

A disadvantage of the public registry is the disclosure of knowledge to others outside the community. When placing knowledge in the public domain, the knowledge may lose its commercial value, limit options for IP protection for the community, and may be used by the public without permission.

4.6 COPYRIGHT AND NEIGHBORING RIGHTS

Under copyright regime, creators and authors are entitled to both economic and moral rights though TRIPS agreement focuses mainly on economic rights. However, the Universal Declaration of Human Rights (UDHR), 1948 recognizes these set of rights.⁴⁴⁵ Moral rights cover special inalienable rights of the author such as paternity rights, privacy rights and integrity rights.

Section 57 of the Indian Copyright Act, 1957⁴⁴⁶ deals with authors' special rights and recognizes authors' right to claim authorship of the work and their right to restrain distortion, mutilation, modification, etc. prejudicial to his honour and reputation of the work.⁴⁴⁷

Copyright, in general vests the right of authorship in the creator of a work and enables him to avert the misuse of his work. The issue of copyright arises in relation to folk materials which consist of Traditional Knowledge in art form. Folk materials include folklore, folk music, drama, and other folk-related artistic endeavors, all of which appeal to a wide market today. There have been several cases of misuse, exploitation, mutilation or dilution of these materials, threatening the concept of originality of expression. Exploitation ranges from copying songs or mixing songs with other forms of popular music, to displaying and collecting sacred items.⁴⁴⁸

Traditional or aboriginal art including paintings and artistic customs of the aboriginal people are under threat of exploitation and infringement.

445. Article 27 of UDHR, which recognizes the material interests resulting from any scientific, literary or artistic production.

446. Inserted by the Amendment Act 38 of 1994.

447. Also see, *Wiley Eastern Ltd. v. Indian Institute of Management*, 1995 PTR, 53 and *Mannu Bhandari v. Kala Vikas Pictures Pvt. Ltd.*, AIR 1987 Del. 13.

448. *Id.*

Srividhya Ragavan provides a revealing instance for the same.⁴⁴⁹ Marlo Morgan's book titled *Mutant Message Down Under*⁴⁵⁰ contains an account of her alleged travel among cannibalistic western Australian aboriginal tribes. It was first published in 1994 and is an account of the author's four months of experience crossing the outback with a group of aborigines, or real people, as they are referred to in the text.⁴⁵¹ The book remained on the United States' best sellers' list for 25 weeks. The author merchandised CDs and videos to promote the book. However, a detailed investigation revealed that the author had never visited Australia or the aboriginal community. The inadequacy of copyright law is highlighted by the fact that such works, though are examples of blatant misuse and violation of the integrity of indigenous people, can still be protected by copyrights, simply because the copyright protects originality of expression of the author and not the idea. It may also violate the sacredness of their art and community since the number of people trained in folk art may be limited, again reflecting its sacred nature.⁴⁵²

Copyright can be used to protect the artistic manifestations of TK holders, especially artists who belong to indigenous and native communities, against unauthorized reproduction and exploitation.⁴⁵³ It may include literary

449. *Id.*

450. Marlo Morgan, *Mutant Message Down Under*, Bookpeople, 1994.

451. http://www.ciao.co.uk/Mutant_Message_Down_Under_Marlo_Morgan__33764, (Accessed on 10-10-11).

452. As in the case Kathakali of Kerala and Yakshagana of Karnataka etc.

453. However, Michael Blankley argues that copyright may not be a sufficiently inadequate or perfect mechanism to protect arts of the indigenous people. For example, copyright laws cannot protect designs that have been around for several hundreds of years and can therefore be considered as a part of the prior art. (Michael Blankley, "Milpururru & Ors v. Indofarm & Ors: Protecting Expressions of Aboriginal Folklore Under Copyright Law," *E LAW*, Vol. 2, No. 1, April 1995) Similarly, where the dance of indigenous community is removed from the main theme and song and incorporated into western music, there is no protection if the dance was copied without permission, as the dance will be deemed to be in the public domain. Where a tribal painting is copied with minor modifications, the indigenous tribes will have no rights under copyright law. The copy can depict a subject in a different manner, thereby conveying a meaning different from what was intended. In the long run, such activity will dilute the tribal customs. Also see, *Milpururru v. Indofurn Pty.*

works such as tales, legends and myths, traditions, poems; theoretical works; pictorial works; textile works such as fabrics, garments, textile compositions, tapestries and carpets; musical works; three dimensional works such as pottery and ceramics, sculptures, wood and stone carvings, and artifacts of various kinds. Performing rights can be used for the protection of the performance of singers and dancers and presentations of stage plays, puppet shows and other comparable performances.⁴⁵⁴ Moreover, WIPO recognizes the performances of indigenous and local community as Traditional Knowledge.⁴⁵⁵ Copyright law affords protection to performances by way of neighboring rights or performer's rights.⁴⁵⁶ Hence, generally within the ambit of copyright and more particularly under the category of performer's rights, the performances of the traditional, indigenous and local communities can be protected.

Copyright protection can very well be extended to folklores. There are many countries which protect folklore as intellectual property under the copyright law.⁴⁵⁷ For example Angola protects as folklore, all literary, artistic and scientific works created by authors presumed to originate in certain regions or ethnic communities, passed from generation to generation, anonymously or collectively or by other means, and constituting one of the basic elements of the traditional cultural heritage.⁴⁵⁸ Malawi Copyright Act, 1989, protects as folklore all literary, dramatic, musical and artistic works

Ltd., 30 I.P.R. 209 (1994) and Yumbulul v. Reserve Bank of Australia 21 I.P.R. 481 (1991) to see the inadequacy of copyright law to protect manifestations of TK from exploitation.

454. *Id.*

455. WIPO Report on Fact-finding Missions on Intellectual Property and Traditional Knowledge (1998-1999) published in April 2001.

456. Section 38 of the Indian Copyright Act, 1957, as substituted by Act 38 of 1994.

457. Annex II of WIPO/GRTKF/IC/3/9, also See, Balantrapur Venkatarao v. Valluri Padmanabha Raju and Ors, (1927)53 MLJ 529 wherein the High Court of Madras considered a book on folklore stories in Telugu containing in all 64 tales as original compilation prima facie possessing copyrightability

458. Article 4(f): Law on Authors' Rights No. 4/90 of March 10, 1990 (Angola).

belonging to the cultural heritage of Malawi created, preserved and developed by ethnic communities of Malawi or by unidentified Malawi authors.⁴⁵⁹ Section 2 of Lesotho Copyright Order, 1989 extends protection to expression of folklore which includes production consisting of characteristic elements of the traditional artistic heritage developed and maintained over generations by a community or by individuals reflecting the traditional artistic expectations of their community. Burundian Law Decree No. 1/9 Regulating the Rights of Authors and Intellectual Property in Burundi,⁴⁶⁰ and Panama Law on Copyright and Neighboring Rights, 1994⁴⁶¹ provide identical provisions to safeguard folklore.

Law on Literary and Artistic Property, 1994 of Tunisia covers a still wide range of subject matters within the expression of folklore. Article 7 states, “folklore forms part of the national heritage. Folklore within the meaning of this law shall be any artistic heritage bequeathed by preceding generations and bound up with customs and traditions and any aspect of folk creation such as folk stories, writings, music and dance.” Bolivian law also treats folklore as traditional cultural heritage of the nation.⁴⁶² In Algeria ‘work inspired by folklore’ is understood to mean any work composed with the aid of elements borrowed from the traditional cultural heritage of Algeria.⁴⁶³

Benin Law on the Protection of Copyright, 1984 further extends the scope of folklore and protects all literary, artistic, religious, scientific, technological and other traditions and productions created by the national communities, passed on from generation to generation and thus constituting the basic elements of the national cultural heritage. Under Article 10 of the

459. Section 2

460. Article 4

461. Article 2.11

462. Article 21 of Bolivian Law on Copyright, 1992

463. Article 14 of Copyright Ordinance No. 73-14 of April 3, 1973

Benin copyright law, folklore belongs to *ab origine*⁴⁶⁴ to the national heritage.⁴⁶⁵ Copyright Law, 1990 of Cameroon covers and protects folk tales, folk poetry, popular songs and instrumental music, folk dances and shows, as well as artistic expressions, rituals and productions of popular art within the expression folklore.⁴⁶⁶

Several other countries also have enacted special provisions to protect their unique folklore. For instance, Congo Law on Copyright and Neighboring Rights, 1982;⁴⁶⁷ Ghana Copyright, 1985;⁴⁶⁸ Law Adopting Provisions on Copyright and Neighboring Rights in the Revolutionary People's Republic of Guinea, 1980; the Copyright Act, 1966 of Kenya;⁴⁶⁹ Liberian Act Adopting a new Patent, Copyright and Trademark Law, 1972;⁴⁷⁰ Dahir (Act) Relating to the Protection of Literary and Artistic Works, 1970 of Morocco;⁴⁷¹ Law Governing Copyright, 1983 of Rwanda;⁴⁷² the Copyright Act 1973 (as amended in 1986) of Senegal;⁴⁷³ Law on Protection of Copyright and Neighboring Rights, 1986 (Zaire);⁴⁷⁴ Code of Intellectual Property Act (Sri Lanka), 1990;⁴⁷⁵ Barbados Copyright Act, 1982;⁴⁷⁶ Law on the Protection of Copyright, Folklore and Neighboring Rights (Togo) 1991;⁴⁷⁷ Ordinance affording Protection to Copyright (No. 84-12 CNR. PRES), 1984 of Burkina

464. An aboriginal inhabitant especially as contrasted with an invading or colonizing people.

465. Article 9 of Central African Republic Ordinance No. 85 002 on Copyright of January 5, 1985 shares an identical provision.

466. Section 10

467. Article 15

468. Section 53

469. Article 9

470. Article 15

471. Article 2.1

472. Article 10

473. Article 3

474. Article 9

475. Article 6

476. Section 6

477. Section 13

Faso⁴⁷⁸ and Ordinance Concerning Literary and Artistic Property, 1977 of Mali recognize folklore as a part of their national cultural heritage and afford legal protection.

It is evident from the above discussion that the literary, artistic, religious, scientific, technological and other traditions and productions created by the national or ethnic communities or unknown or unidentified authors, but passed on from generation to generation can fabulously be given legal recognition and protection under the copyright law as intellectual property. A wide range of traditions which form part of cultural heritage can be protected under this option. It can be argued that this kind of protection would provide traditional and indigenous communities with legal means to prevent any acts that distort the paternity rights of the community or affect their integrity as TK holders. However, in this aspect, identification of the author and duration of protection will be concerns in the copyright law. Though copyright accommodates the concept of joint authorship, copyright cannot be vested over the entire tribe or community since copyright does not recognize community ownership. Copyright does not recognize perpetual protection also. In such a situation until we develop a sui generis system or the concept of community ownership in the Indian copyright law, the customary law must prevail.⁴⁷⁹

4.7 TRADE SECRETS

Trade secrets protect undisclosed knowledge through secrecy and access agreements, which may also involve paying royalties to knowledge

478. Article 66

479. The Maori society in New Zealand provides example for a society that managed their resources and TK through customary rights. See, Lucy M. Moran, "Intellectual Property Law Protection for Traditional and Sacred "Folklife Expressions"—Will Remedies Become Available to Cultural Authors and Communities?" U. BAL. INTEL. PROP. L.J., Vol. 6, 1998, p. 99.

holders for access to and the use of their knowledge. Three elements are required for knowledge to be classified as a trade secret. The knowledge:

- must have commercial value,
- must not be in the public domain, and
- is subject to reasonable efforts to maintain secrecy.

Traditional Knowledge that is maintained within a community could be considered a trade secret. But once the knowledge is diffused to the public, this option no longer exists. A trade secret is only enforceable as long as it remains a secret. Trade secrets have no legal protection except in cases of “breach of confidence and other acts contrary to honest commercial practices.”⁴⁸⁰ This means that one 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 in order to be compensated for the loss of secrecy. Trade secrets are commonly combined with contractual agreements. This is a way to profit from royalty payments for the use of knowledge. If a trade secret happens to enter the public domain, contractual royalty payment agreements may still remain in effect throughout the life of the agreement. It is important to remember that knowledge that is considered a trade secret can be used by anyone if the knowledge leaks into the public domain, is independently discovered by another individual, or reverse engineered. It is difficult to protect trade secrets against misappropriation due to lack of legal entitlement to the bearer of the secret. When applied to knowledge belonging to a community, the community must make a reasonable effort to maintain the secrecy of the knowledge. If there is not a reasonable effort to maintain the

480. http://www.wto.org/english/thewto_e/whatis_e/tif_e/agrm6_e.htm. ,(Accessed on 15-01-14).

Traditional Knowledge's secrecy, then trade secret protection is not applicable to the Traditional Knowledge.

4.8 TRADEMARKS

The United States Patent and Trademark Office (USPTO) defines a trademark as “a word, phrase, symbol or design, or a combination of words, phrases, symbols or designs, that identifies and distinguishes the source of the goods of one party from those of others.”⁴⁸¹ In other words, trademarks are a way of protecting the use of words, phrases, symbols, designs, or any combination of these associated with a product. Once a trademark is established, it can be used to identify and differentiate similar products. Think how often names, images, and photos are always used in marketing products. Trademarks are based on two principles:

Distinctiveness and avoiding confusion. Being distinct means that the trademark does not resemble any other existing word, phrase, symbol, design, etc. associated with a similar product. Avoiding confusion as to the source of product is important for consumers purchasing these products. Trademarks distinguish products in order not to mislead consumers into thinking that a product is something that it is not or comes from another source. How can trademarks be applied to Traditional Knowledge? Suppose a company sells a product comprised of *maca*, a plant native to the Andean region. An indigenous community in the Andes, the original knowledge holders of *maca*'s uses, may also want to sell *maca* or profit from their own natural resources and knowledge. They could register a trademark like the example below:

Now the indigenous group has two new options:

481. <http://www.uspto.gov/web/offices/pac/doc/general/whatis.htm> (Accessed on 34-09-13).

- a) If there are no patents preventing the sale of *maca* for specific purposes, the indigenous group can register the above trademark and sell *maca* using this symbol to distinguish their brand.
- b) If a patent prohibits the indigenous group from selling the product, they could register the above trademark and subsequently license out the use of the trademark in order to allow companies to ensure authenticity. It is a value added to the original product with the addition of this seal of approval. By placing this symbol on packages of *maca*, the consumer knows that the original knowledge holders approve of the brand. It may also be possible for the community to sell *maca* without making claims for its use as prohibited under the patent.

This is just one example. Think how names, images, and photos could be applied to the marketing of products based on Traditional Knowledge. How about traditional procedures used when producing certain products? Existing procedures could be performed on products and approved by a community as a method of adding value to a product with the potential to collect royalties on the products sold. It might also be advantageous to consider certifying the community of origin or the geographical locations of products as a method of adding value. A certification mark is a type of trademark that is explained in the next section, “*Geographical Indicators*.”

4.9 GEOGRAPHICAL INDICATORS

A geographical indicator identifies a good as originating in a territory or region, or locality in that territory, where a given quality, reputation, or other characteristic of the good is attributable to its geographical origin.⁴⁸² Like trademarks, geographical indicators are typically words or terms, but when associated with a product, positively attribute a known quality to the

482. Agreement on Trade Related Aspects of Intellectual Property (TRIPs), 1994, Art. 22- 31

product that is associated with a specific geographical location. Geographical indicators cannot be used to describe a product unless it originates in the region associated with the name. For example, Swiss watches are associated with a tradition of high quality, so the term Swiss watch is a geographical indicator that assumes a watch came from Switzerland. Roquefort cheese (from France) is another product associated with high quality and it is also a geographical indicator. Roquefort cheese can only be used to describe cheese produced in Roquefort-sur-Soulzon, France, and aged in the traditional caves (a practice also associated with the geographical indicator).

Other examples of geographical indicators include:

- Bordeaux Wine (France),
- Parma Ham (Italy),
- Stilton Cheese (United Kingdom),
- Darjeeling Tea (India),
- Cognac Brandy (France), and
- Queso Murcia (Spain).

Why are geographical indicators protected as intellectual property?

Geographical indicators serve four main purposes. They:

- identify where the product is from (its source),
- indicate the unique qualities of a product,
- promote the product with a distinguishing name (for business purposes), and

- prevent infringement and unfair competition by establishing a legal basis for using a location name to avoid confusion with similar products.⁴⁸³

A specific form of geographical indicator is called an *appellation of origin*. Appellations of origin specify the quality of a product based on its geographical environment and are protected under the Lisbon Agreement of 1958. Despite its criticisms for being incompatible with the TRIPs Agreement, twenty countries are party to the Lisbon Agreement. In 1998, of the 766 protected appellations of origin, 95% belonged to European countries. How can one protect against the inappropriate use of geographical indicators? The answer is simple: pre-emptively protect the geographical indicator by ensuring it is commonly known and documented. This can be done by placing the geographical indicator in the public domain via a database or other publicly accessible medium. The second option is to apply for a certification mark that is an official registration (as opposed to an unofficial disclosure of the indicator in the public domain). The certification mark is a type of trademark (as discussed in the previous section, “*Trademarks*”). Currently, international registry protection is available only for wines and all other products are subject to national registry laws. Are all countries obliged to establish and protect geographical indicators? If a country is party to the TRIPs Agreement, it is their international legal obligation to formulate legislation protecting geographical indicators. Article 22 of the TRIPs agreement states that members must provide legal means to prevent “The use of any means in the designation or presentation of a good that indicates or suggests that the good in question originates in a geographical area other than the true place of origin

483. <http://www.uspto.gov/web/offices/dcom/olia/globalip/geographicalindication.htm>. (Accessed on 15-01-14)

in a manner which misleads the public as to the geographical origin of the good.⁴⁸⁴ Additionally, the TRIPs Agreement requires the protection of what is defined as unfair competition in the Paris Convention.⁴⁸⁵ “All acts of such a nature as to create confusion by any means whatever with the establishment, the goods, or the industrial or commercial activities, of a competitor” shall be prohibited under this article.⁴⁸⁶ What does all this mean in the everyday life of a Traditional Knowledge holder? Let’s examine an example that adequately explains the importance of a geographical indicator. The *maca* plant is native to the high peaks of the Andes Mountains where it thrives in the high altitudes. Suppose a Western company were to modify the plant so that it could grow in lower elevations. Then, that company was to grow large quantities of the plant in the United States and market the plant product as “Andean *maca*.” This is a clear violation of the provisions that protect against the improper use of geographical indicator. Andean *maca* is associated with a distinguished quality, and by using the name, the product, which is not produced in the Andes, misleads consumers into believing that:

- the product was actually cultivated in the Andes, and
- the product is of the same quality as that produced in the Andes.
- *Maca* grown only in the Andes is then capable of being marketed as “Andean *Maca*” if:
- Andean-grown *maca* is commonly known to be of superior quality to other
- *maca* and this fact is documented in the public domain, or
- a certification mark has been officially registered with a federal government for “Andean *maca*.”

484. TRIPs, 1994, Art. 22

485. Paris Convention for the Protection of Industrial Property, as revised at Stockholm on July 14, 1967 (Stockholm Act)

486. *Id.*, Art. 10bis, 3(1)

4.10 COMBINATION OF INTELLECTUAL PROPERTY RIGHTS

Many authors share the view that if a single form of IPR is not suitable for protecting TK, forms of collective IPR can be developed and used. For instance, neighbouring rights provide moral and remunerative rights to performing artists to authorize copies of an artwork or a musical performance. A similar system that guarantees rights of the community over the Traditional Knowledge and establishes a mechanism for controlling access to and use by parties outside the community would help to develop an optimal policy for protection and use of Traditional Knowledge.

Experts and critics who advocate for comprehensive protection of TK have propounded several theories. One such model is through moral right theory as suggested by Doris Estelle Long. It envisages recognition of moral rights of TK holders by acknowledging the source of a work and in protecting the integrity of TK holders in their work.⁴⁸⁷ Downes suggests that moral rights will enable recognition of the works of traditional people.⁴⁸⁸ N. S. Gopalakrishnan puts forward obligation theory casting obligation on the subsequent inventor or the IPR claimant to disclose the source of information.⁴⁸⁹ According to him, the owner of a new product based on Traditional Knowledge while claiming intellectual property protection must have the obligation to disclose to the public from where the knowledge was taken or information was obtained. The person who appropriates TK has an obligation to give evidence of the prior informed consent also.

487. Doris Estelle Long, "The Impact of Foreign Investment on Indigenous Culture: An Intellectual Property Perspective," N.C. J. INT'L L. & COM. REG., Vol. 23, 1998, p. 229

488. David Downes, "How Intellectual Property Could Be a Tool to Protect Traditional Knowledge," COLUM. J. ENVTL. L., Vol. 25, 2000, p. 253-57

489. Dr. N. S. Gopalakrishnan, "Protection Of Traditional Knowledge — The Challenges," paper presented at the WIPO Conference held at Peking University, Beijing, June 15, 1999

Srividhya Ragavan argues that for the short-term, till the global community develop an adequate legal mechanism, a combination of moral rights and copyrights, coupled with trademarks and geographical indication can provide overlapping rights. For instance, folklore can have a geographic indication indicating the region of origin. It may also have a trademark as a mark of the tribe, group, or sometimes as a mark owned by the artist. The songs, lyrics and tunes can also be protected under moral rights. Attempts to remix a song and other forms of tampering can be brought as violations under moral rights theories or under trade secret law.⁴⁹⁰

Although the limitations of existing IP laws in the protection of TK cannot be undermined, conventional IP mechanisms can be used to protect TK and related resources. Existing intellectual property rights regime can be harnessed for the benefit of Traditional Knowledge holders in two ways: by positive as well as defensive protection. Positive protection of TK requires legal recognition of the rights of the TK holders over their TK. The positive protection entails the active assertion of IPRs or granting of exclusive property rights for TK with a view to exclude others from making specific forms of use of the protected TK or associated materials. As discussed above, the legal recognition of TK can be given and various forms of TK can be protected in existing or slightly modified and adapted existing IPR system. Alternatively, Traditional Knowledge which is in the public domain can be protected defensively also. Defensive protection does not entail the assertion of IP rights, but rather aims at preventing third parties from claiming rights in misappropriated subject matter.⁴⁹¹ As WIPO suggested such protection would essentially provide legal means to restrain third parties from undertaking

490. *Id.*

491. “Elements of a Sui Generis System for the Protection of Traditional Knowledge,” document prepared by the Secretariat, WIPO Doc. WIPO/GRTKF/IC/4/8, September 30, 2002, para. 13

certain unauthorized acts that involve the use of the protected material.⁴⁹² In other words, Traditional Knowledge holders can ensure that their open access knowledge is not appropriated by other people. Defensive protection can be ensured by making use of the existing legislation.

Though positive protection can imply the adoption of new laws, the existing categories of intellectual property or a combination of various forms of intellectual property can be used to protect Traditional Knowledge, till we develop a comprehensive sui generis legislative regime.

4.11 SUI GENERIS INTELLECTUAL PROPERTY PROTECTION FOR TRADITIONAL KNOWLEDGE

The above analysis shows that there are ways in which existing intellectual property rights could be harnessed for Traditional Knowledge protection. These avenues are, however, limited insofar as the protection which is possible is limited by the framework within which adaptation is sought. The patent system can, for instance, be amended to allow better defensive protection of existing Traditional Knowledge but the basic framework was never developed with Traditional Knowledge in mind. There are other practical reasons which limit the relevance of existing intellectual property rights regimes for Traditional Knowledge protection. For instance, the estimated cost of filing patents in developed countries makes patents a generally unattractive protection avenue for small Traditional Knowledge holders.⁴⁹³ The efforts of SRISTI and the NIF to harness existing property rights systems for Traditional Knowledge protection seem to confirm that there are opportunities which can be used with various forms of adaptation but this is, for instance, unlikely to extend to all relevant Traditional Knowledge

492. WIPO/GRTKF/IC/7/6

493. For eg, John H Barton, 'Issues Posed by a World Patent System', 712JInt'lECon L 341(2004).

innovations. Further, the existing intellectual property rights system is generally not well suited to offer protection to existing Traditional Knowledge. Geographical indications provide an interesting exception to this situation even though they cannot offer comprehensive protection of Traditional Knowledge.

From the point of view of Traditional Knowledge holders, the general conclusion would seem to be that the protection which can be offered through existing intellectual property rights can only constitute one part of an overall strategy to protect Traditional Knowledge. There are also broader reasons for looking beyond the existing intellectual property rights regime in the search for a comprehensive system of Traditional Knowledge protection. In general the protection of Traditional Knowledge can only be effective from the point of view of Traditional Knowledge holders if it recognises that Traditional Knowledge safeguarding and enhancement is not necessarily undertaken for commercial reasons. This is in fact one of the significant tensions that the use of the existing intellectual property rights system fosters because it tends to assume that all activities are undertaken only to commercialise products. There are many places around the world where the conservation of biodiversity and related knowledge is undertaken for a variety of purposes which may or may not include commercial activities.⁴⁹⁴ As a result, it is important to introduce legal frameworks which do not focus exclusively on commercial aspects but take into account other aspects as well. In the case of Traditional Knowledge, the basic features of a *sui generis* system should be to provide some form of protection for existing knowledge as a reward for ongoing contributions to biodiversity conservation and Traditional Knowledge

494. For eg. Kristina Plenderleith, 'Traditional Agriculture and Soil Management' in Darrell Addison Posey et al eds, *Cultural and Spiritual Values of Biodiversity* 287 (London: Intermediate Technology, 1999).

safeguarding as well as protection for innovations which may be carried out with a view to develop new commercial products. Commercial and noncommercial aspects should not be distinguished in the legal system because they are part of a single reality in practice.

In the debates which are taking place over *sui generis* Traditional Knowledge protection, different options have been proposed, most of which focus on the commercial aspect of the rise of Traditional Knowledge. These range from defensive systems to fully fledged property rights systems.

Defensive protection for existing Traditional Knowledge can take several forms. These include the disclosure requirement analysed above in the context of the patent system or Traditional Knowledge registers. Other defensive approaches include, for instance, compensatory liability schemes. Here, the rationale is to foster access to knowledge to ensure that research is not impeded. At the same time, the system provides for compensation to Traditional Knowledge holders in case the use of the knowledge fosters commercial benefits. Another proposal is to try and ensure that the use of knowledge which is already in the public domain remains unrestricted but that users should pay for the use of the knowledge.⁴⁹⁵ This paying public domain constitutes an option which can, for instance, provide defensive protection to knowledge available in open Traditional Knowledge registers.⁴⁹⁶

There are a number of other options that give Traditional Knowledge holders more control over their knowledge. In some cases options open for Traditional Knowledge protection may not fit within the framework of

495. Coenraad J Visser, 'Making Intellectual Property Laws Work for Traditional Knowledge', in Michael Finger and Philip Schuler eds, *Poor People's Knowledge—Promoting Intellectual Property in Developing Countries* 207, Oxford: Oxford University Press, 2004.

496. For eg. Matthias Leistner, *Analysis of Different Areas of Indigenous Resources*, in Silke von Lewinski (ed) *Indigenous Heritage and Intellectual Property—Genetic Resources, Traditional Knowledge, and Folklore* 49, The Hague: Kluwer Law International, 2004.

existing intellectual property rights regimes. This can be addressed from two different angles. Firstly, there are options for Traditional Knowledge protection that may go against the minimum standards of the TRIPS Agreement but may be justifiable under the general clauses of Articles 7 and 8 of the Agreement. This is, for instance, the case of the measures taken by South Africa to foster access to drugs. Secondly, there are options such as the development of fully fledged *sui generis* rights for Traditional Knowledge protection which go beyond the TRIPS Agreement. There are two main reasons for arguing that these options are possible under present international law for developing countries. Firstly, Traditional Knowledge can be seen as falling outside of the purview of the TRIPS Agreement and countries are therefore free to legislate on these “new” aspects. Secondly Traditional Knowledge protection is part of the broader web of obligations that a majority of countries have taken, for instance, under the Biodiversity Convention to respect, preserve and maintain Traditional Knowledge or in the context of human rights treaties, for instance. They are in this sense under an obligation to conceive of Traditional Knowledge protection in a broader sense which takes into account all the dimensions of the issue.

In the sense of a broad property rights regime which focuses not only on commercialisation but also on broader aspects, a *sui generis* regime is a legal regime which addresses questions of ownership of existing Traditional Knowledge, questions of ownership of Traditional Knowledge innovations, questions concerning the safeguarding of existing Traditional Knowledge and questions concerning the conservation and enhancement of underlying biological resources. A *sui generis* Traditional Knowledge legal regime is one which ensures the integration of issues related to the protection of the intellectual assets of Traditional Knowledge holders with issues related to the

sustainable management of the underlying resources. The development of a sui generis Traditional Knowledge protection regime could in this sense constitute a model for the development of “sustainable intellectual property rights” providing for the integration of environment and agriculture concerns in intellectual property rights frameworks. This need not be limited to Traditional Knowledge since a number of the relevant issues also arise in other contexts, such as genetic engineering.

A sui generis Traditional Knowledge protection regime could be generally conceived along the lines of the sui generis farmers’ rights model introduced with suitable modification to make it of broader relevance for all Traditional Knowledge. Again, sui generis farmers’ rights are in fact sui generis rights for holders of Traditional Knowledge related to plants used in agriculture. The reason for focusing separately on farmers’ rights in this book is linked to the fact that plant variety protection has been the object of significant attention through Article 27(3)b of the TRIPS Agreement. Otherwise, there is no specific reason to have a separate legal protection regime that would partly duplicate a broader regime on Traditional Knowledge. In this sense, for countries which have not yet implemented their obligations under Article 27(3)b of the TRIPS Agreement concerning plant variety protection, one option is to adopt to a single regime for the protection of all Traditional Knowledge. This would, for instance, provide a way to avoid some of the “overlaps identified between the Plant Variety Act and the Biodiversity Act.

4.12 PROTECTION OF TRADITIONAL KNOWLEDGE: EXPERIENCE FROM SOME OTHER COUNTRIES

The aftermath of CBD and the TRIPS imposed IPR regime gave a strong message to the bio-rich developing countries that their Traditional

Knowledge, cultures, long history, spiritual and community values which have evolved during centuries are being misappropriated by the unethical use of scientific and technological research, the imposition of intellectual property rights on life forms and on community innovations and practices. The developing countries realized that the post TRIPS-IPR regime is totally at odds with their centuries' old culture, practices and tradition. This realization led to the enactment of important legislations by certain countries which are endowed with biogenetic resources and associated TK.

4.12.1 BRAZIL

Brazil has adopted a Provisional Measure, with force of law, known as Provisional Measure on Access to Genetic Resources and Traditional Knowledge, 2001.⁴⁹⁷ The opening lines of the Provisional Measure state that the provisions are enacted for regulating access to the genetic heritage,⁴⁹⁸ protection of and access to associated TK, sharing of benefits and access to and transfer of technology for the conservation and of use genetic resources and TK as obligated by articles 1, 8(j), 10(c), 15 and 16(3) and (4) of the Convention on Biological Diversity, 1992 and article 225 (1)(ii) and (4) of the Brazilian Constitution.

As stated in article 1, the Provisional Measure provides for the benefits, rights and obligations concerning (i) access to components of the genetic heritage⁴⁹⁹ of the country for purposes of scientific research, technological

497. Provisional Measure No. 2.186-16 of August 23, 2001.

498. Article 1, §.2 of the Provisional Measure states that access to components of the genetic heritage on the continental shelf shall be subject to the provisions of Law No. 8.617 of January 4, 1993.

499. Genetic heritage means information of genetic origin contained in samples of all or part of plant, fungal, microbial or animal specimens, in the form of molecules and substances deriving from the metabolism of such living beings and extracts obtained from such organisms, live or dead, encountered in situ, including domestic situations, or kept in ex situ collections after in situ collection within the national territory, on the continental shelf or in the exclusive economic zone (the Provisional Measure, Article 7. I).

development or for bioprospecting (ii) access to Traditional Knowledge relating to the genetic heritage that is relevant to the conservation of biological diversity, the integrity of the country's genetic heritage and the use of its components; (iii) fair and equitable sharing of the benefits deriving from exploitation of components of the genetic heritage and the associated Traditional Knowledge; and (iv) access to and transfer of technology for the conservation and use of biological diversity.

The Provisional Measure protects both individual and collective knowledge of the indigenous and local community.⁵⁰⁰ It controls access to genetic heritage⁵⁰¹ and TK.⁵⁰² Access to associated TK is defined as “acquisition of information pertaining to knowledge or individual or collective practices, associated with the genetic heritage, of an indigenous or local community for purposes of scientific research, technological development or biological prospection, with a view to its application in industry or elsewhere.”⁵⁰³

The authority and permission of the Union is compulsory for obtaining access to components of the genetic heritage; and its use, marketing and exploitation, for all purposes, is subject to inspection, restrictions and benefit-sharing on the terms and conditions established by the Provisional Measure and its regulations.⁵⁰⁴

500. Article 7. II defines associated Traditional Knowledge as the information or individual or collective practices of an indigenous or local community having real or potential value and associated with the genetic heritage.

501. Article 7. IV defines access to the genetic heritage as acquisition of samples of components of the genetic heritage for purposes of scientific research, technological development or bioprospection, with a view to its application in industry or elsewhere.

502. Traditional Knowledge associated with genetic heritage also encompasses the cultural heritage of the country. (Article 8. II).

503. Article 7.V

504. Article 2

The exchange and dissemination of components of the genetic heritage and associated Traditional Knowledge practiced within indigenous and local communities for their own benefit and based on customary usage are preserved under the Provisional Measures.⁵⁰⁵ TK of indigenous and local communities relating to the genetic heritage is protected by the Provisional Measure against illegal use and exploitation.⁵⁰⁶ The right of indigenous and local communities to decide on the use of their TK associated with the genetic heritage is recognized by this legal instrument. Nothing is permitted to impede the preservation, use and development of TK of an indigenous or local community.⁵⁰⁷ However, the Provisional Measure explicitly states that the protection of Traditional Knowledge and genetic resources should not prejudice or limit rights pertaining to intellectual property.⁵⁰⁸

Article 9 of the Provisional Measure delineates the scope and extent of the right of indigenous or local communities over their TK. It prescribes as under:

“Indigenous or local communities that create, develop, hold or preserve Traditional Knowledge associated with the genetic heritage are guaranteed the right to: (I) have the origin of the access to Traditional Knowledge mentioned in all publications, uses, exploitation and disclosures; (II) prevent unauthorized third parties from: (a) using or carrying out tests, research or investigations relating to associated Traditional Knowledge; (b) disclosing, broadcasting or re-broadcasting data or information that incorporate or constitute associated Traditional Knowledge; and (III) derive profit from economic exploitation by third parties of associated Traditional Knowledge

505. Article 4

506. Article 8

507. Article 8.III

508. Article 8.IV

the rights in which are owned by the community as provided in this Provisional Measure.”

Any TK associated with the genetic heritage can be owned by the community, even if only one single member of the community holds that knowledge. The Council for the Management of Genetic Resources created within the Ministry of the Environment performs various functions related to access to TK and genetic resources.

Authorization of access to associated TK is subject to the prior consent of the owner.⁵⁰⁹ Authorization of the national authority is required for collecting components of the genetic heritage and access to associated TK by a foreign legal entity for the purpose of bio-prospecting.⁵¹⁰ Only a national institution, public or private, that carries on research and development activities in the biological and related fields will be given authorization for access to components of in situ genetic heritage and to associated TK.⁵¹¹

The person responsible for the expedition to collect samples has to, at the end of his work in each area accessed, sign with the owner a declaration listing the material accessed. If the owner of the area was not identified when the expedition to collect samples took place, the declaration needs to send to the Management Council.

When there is a prospect of commercial use, in situ access to samples of components of the genetic heritage and to associated TK is permitted only after the contract for use of the genetic heritage and benefit sharing has been signed.⁵¹² If potential for economic use has been identified in either a product or a process, whether or not it qualifies for any IPR, on the basis of a sample

509. Article 11. IV(b)

510. Article 12

511. Article 16

512. Article 16, Sec 4

of a component of the genetic heritage and information derived from associated TK, the institution conducting the research is obliged to communicate the same with the Management Council and to execute a contract for the use of the genetic heritage and benefit sharing.

The institution accessing and receiving samples or TK is obliged to facilitate access to and transfer of technology for the preservation and use of heritage or knowledge with the national research and development institution responsible for access and dispatch of samples and information on the knowledge. As per the Provisional Measure, access to and transfer of technology between the national research and development institution, and the foreign institution can be effected by:

- a)** scientific research and technological development
- b)** basic and specialized training of human resources
- c)** exchange of information
- d)** exchange between the national research institution and the research institution with its headquarters abroad
- e)** consolidation of the infrastructure for scientific research and technological development
- f)** economic exploitation, in partnership, of a process or product derived from the use of components of the genetic heritage, and
- g)** establishment of a technology-based joint venture.⁵¹³

The Provisional Measure envisages a fair and equitable benefits arising from economic exploitation of a product or process developed from samples of components of the genetic heritage and associated TK between the contracting parties.⁵¹⁴ The essential clauses in the contract for use of the

513. Article 22

514. Article 24

genetic heritage and benefit sharing include: (a) purpose, elements, quantification of samples and intended use, (b) duration, (c) method of fair and equitable sharing of benefits and, where applicable, access to and transfer of technology, (d) rights and responsibilities of the parties and (e) intellectual property rights.⁵¹⁵ The benefits can comprise: division of profits, payment of royalties, technology access and transfer, unrestricted licensing of products or services and training of human resources.⁵¹⁶

It also attaches liability for contravention of the provisions of the Provisional Measure by making the guilty party liable to payment of an indemnity equivalent to a minimum of twenty per cent of the gross invoiced amount obtained through the marketing of the product or of royalties obtained from third parties by the guilty party as a result of the licensing of the product or process or the use of the technology.⁵¹⁷

4.12.2 AFRICAN UNION

Africa has enacted a specific legislation to protect the rights of local communities over biological resources, knowledge and technologies which is known as ‘African Model Law’. African Model Legislation for the Protection of the Rights of Local Communities, Farmers and Breeders, and for the Regulation of Access to Biological Resources, 2000 asserts that the state and its people have sovereign and inalienable rights over their biological resources. It imposes duty on the state and its people to regulate access to biological resources and to community knowledge and technologies. The significance of the legislation particularity rests on the fact that it recognizes the collective right of communities over their TK. The model law establishes the collective rights of the community in the following lines:

515. Article 28

516. Article 25

517. Article 26

“The rights of local communities over their biological resources, knowledge and technologies that represent the very nature of their livelihood systems and that have evolved over generations of human history, are of a collective nature and, therefore, are *a priori* rights which take precedence over rights based on private interests.”

Community rights are defined as those rights held by local communities over their biological resources or parts or derivatives thereof, and over their practices, innovations, knowledge and technologies. Community knowledge or indigenous knowledge, under the scheme of the model law means the accumulated knowledge that is vital for conservation and sustainable use of biological resources and/or which is of socio-economic value, and which has been developed over the years in indigenous/local communities.⁵¹⁸

The law aims at protecting and encouraging cultural diversity, giving due value to the knowledge, technologies, innovations and practices of local communities with respect to the conservation, management and use of biological resources. It also acknowledges the vital role that women play in the generation, conservation and sustainable use of biological diversity and associated knowledge and technologies. The legislation emphasizes much on the effective participation of its citizens in the protection of their collective and individual rights and decision making processes which affect their biological and intellectual resources as well as the activities and benefits derived from their utilization. The model law recognizes the need to promote and support traditional and indigenous technologies for in the conservation and sustainable use of biological resources.

518. Part II, dealing with definition and scope of the model law

The legislation applies to (a) biological resources in both *in situ* and *ex situ* conditions, (b) the derivatives of the biological resources, (c) community knowledge and technologies, (d) local and indigenous communities, and (e) plant breeders. However, it does not apply to (i) the traditional systems of access, use or exchange of biological resources and (ii) access, use and exchange of knowledge and technologies by and between local communities.

As stated in its objectives, the main aim of the legislation is to ensure the conservation, evaluation and sustainable use of biological resources, including agricultural genetic resources, and knowledge and technologies in order to maintain and improve their diversity as a means of sustaining all life support systems. The specific objectives are as follows:⁵¹⁹

- a) to recognize, protect and support the inalienable rights of local communities including farming communities over their biological resources, knowledge and technologies
- b) to recognize and protect the rights of breeders
- c) to provide an appropriate system of access to biological resources, community knowledge and technologies subject to the prior informed consent of the state and the concerned local communities
- d) to promote appropriate mechanisms for a fair and equitable sharing of benefits arising from the use of biological resources, knowledge and technologies
- e) ensure the effective participation of concerned communities, with a particular focus on women, in making decisions as regards the distribution of benefits which may derive from the use of their biological resources, knowledge and technologies

519. Part I of the model law

- f)** to promote and encourage the building of national and grassroots scientific and technological capacity relevant to the conservation and sustainable use of biological resources
- g)** provide appropriate institutional mechanisms for the effective implementation and enforcement of the rights of local communities, including farming communities and breeders, and the conditions of access to biological resources, community knowledge and technologies
- h)** promote the conservation, evaluation and sustainable utilization of biological resources with a particular focus on the major role women play, and
- i)** to ensure that biological resources are utilized in an effective and equitable manner in order to strengthen the food security of the nation.

The model law requires written prior informed consent of the National Competent Authority before accessing to any biological resources and knowledge or technologies of local communities in any part of the country.⁵²⁰ The model law states in detail the mandatory information that an applicant must provide to the National Competent Authority in an application to obtain written permit. The applicant must give the following information to obtain PIC:⁵²¹

- a)** the identity of the applicant and the documentary proof for her/his legal capacity to contract
- b)** the resources to which access is sought and the sites from which it will be collected
- c)** its present and potential uses, its sustainability and the risks which may arise from the access

520. Parts III Articles 3 & 4

521. Part III, Article 4

- d)** whether the collection of the resource will endanger any component of biological diversity
- e)** the purpose for which access to the resource is requested
- f)** type and extent of research
- g)** commercial use expected to be derived from the research
- h)** description of the manner and extent of local and national collaboration in the research and development of the biological resource concerned
- i)** the national institution/s which will participate in the research
- j)** the location where the research and development will be carried out
- k)** the primary destination of the resource and its probable subsequent destination/s
- l)** the economic, social, technical, biotechnological, scientific, environmental or any other benefits that are intended, or may be likely to, accrue to the country and local communities providing the biological resource as well as the collector and the country or countries where he/she operates
- m)** the proposed mechanisms and arrangements for benefit sharing
- n)** description of the innovation, practice, knowledge or technology associated with the biological resource, and
- o)** an environmental and socio-economic impact assessment covering at least the coming three generations, in cases where the collection is in large quantities.

It is obligatory that the National Competent Authority must consult with the local community or communities before granting PIC. The model law ensures the concerned local communities participation in decision making processes. The model law declares as invalid and makes penal any access

carried out without the prior informed consent of the State and the concerned local communities.

Any decision on the application for PIC will be taken only after publishing the application in gazette or newspaper for effective dissemination of the relevant information to the communities concerned and to other interested parties for their comments.⁵²²

The model law also lays down the essential contents in an agreement for access to resources and knowledge. It will have, *inter alia*, the following agreements:⁵²³

- a) to guarantee to deposit duplicates of, with complete field information on, each specimen of the biological resource or the records of community innovation, practice, knowledge or technology collected with the duly designated governmental agencies and, if so required, with local community organizations.
- b) to inform immediately the National Competent Authority and the concerned local community or communities of all findings from R&D
- c) not to transfer the biological resource or any of its derivatives or the community innovation, practice, knowledge or technology to any third party without the authorization of the National Competent Authority and the concerned local community
- d) not to apply for any form of intellectual property protection over the biological resource or parts or derivatives thereof and not to apply for intellectual property rights protection over a community innovation, practice, knowledge or technology without the prior informed consent of the original providers

522. Part III, Article 6

523. Part III, Article 8

- e) to contribute economically to the efforts of the State and concerned local community or communities in the regeneration and conservation of the biological resource, and the maintenance of the innovation, practice, knowledge or technology, and
- f) to submit a regular status report of R&D to the National Competent Authority.

The application for access for research purposes must clearly state the objective of the research and the relation of the applicant to industry. Neither the sample nor the associated information can be transferred without a material transfer agreement reserving the prior rights of the state and communities. The model law prohibits patents over life forms and biological processes in connection with the access and use of a biological resource, community innovation, practice, knowledge, etc.⁵²⁴

Article 12 mandates the benefit sharing requirement. The state and the community are entitled to share the benefits arising out of the earning derived from the collected knowledge or resources. The concerned community or communities are entitled for at least fifty per cent of benefits and it is to be distributed equitably amongst the men and women in the community.⁵²⁵ The access permit is subject to the payment, made before commencement of collection. The quantum of the payment will be determined on the basis of purpose of research, the number of samples, the area of collection, the duration of collection, nature of rights etc. The National Competent Authority can grant the collector any appropriate permit for access: academic research permits, commercial research permit or commercial exploitation permit, as the case may be. In the event of any violation of provisions in the model law or terms in the agreement the National Competent Authority, in consultation

524. Part III, article 9

525. Article 22

with the concerned local community, has power to unilaterally withdraw the permit.⁵²⁶

The model law elaborately deals with community rights, farmers' rights and plant breeders' rights. The communities are given rights over biological resources and innovations, practices, knowledge and technologies acquired through generations. They also have the right to collectively benefit from the use of their biological resources; right to collectively benefit from the utilization of their innovations, practices, knowledge and technologies; and rights to use their innovations, practices, knowledge and technologies in the conservation and sustainable use of biological diversity. The communities can exercise collective rights as legitimate custodians and users of their biological resources.⁵²⁷ The state is obliged to recognize and protect the community rights enshrined and protected under the norms, practices and customary law. Access to biological resources, innovations, practices, knowledge or technology is subject to the PIC of the concerned community or communities. The state has to ensure equal participation of the local communities and women in all decision making processes.⁵²⁸ The local communities have the right to refuse access to their biological resources and associated knowledge and right to withdraw consent or place restrictions on R&D if it is detrimental to their socio-economic life, or their natural or cultural heritage.⁵²⁹ However, no legal barriers can be placed on the traditional exchange system of the local communities in the exercise of their rights.

The model law also recognizes community intellectual rights of the local communities, including traditional professional groups and traditional

526. Article 14

527. Article 16

528. Article 18

529. Articles 19 & 20

practitioners.⁵³⁰ The community can identify, interpret and ascertain community innovation, practice, knowledge or technology, or a particular use of a biological or any other natural resource under their customary practice and law. Non-registration of any community innovations, practices, knowledge or technologies does not disentitle the community from protecting it as community intellectual rights.

Part V of the model law recognizes farmers' rights. The law states that the farmers' rights stemming from the enormous contributions that local farming communities have made in the conservation, development and sustainable use of plant and animal genetic resources constitute the basis of breeding for food and agriculture production. Farmers have right to protect their varieties and breeds under the rules of customary practices and laws. A variety with specific attributes identified by a community is entitled for intellectual protection through a variety certificate which does not have to meet the criteria of distinction, uniformity and stability. This variety certificate entitles the community to have the exclusive rights to multiply, cultivate, use or sell the variety, or to license its use. The farmers' rights include the right to⁵³¹

- a)** the protection of their Traditional Knowledge relevant to plant and animal genetic resources
- b)** obtain an equitable share of benefits arising from the use of plant and animal genetic resources
- c)** participate in making decisions on matters related to the conservation and sustainable use of plant and animal genetic resources
- d)** save, use, exchange and sell farm-saved seed/propagating material of farmers' varieties

530. Article 23

531. Article 26

- e) use a new breeders' variety protected under this law to develop farmers' varieties, including material obtained from gene banks or plant genetic resource centers, and
- f) collectively save, use, multiply and process farm-saved seed of protected varieties.

Any product derived from the sustainable use of a biological resource is eligible for a certificate or label of recognition. Article 30 recognises plant breeders' rights in respect of new varieties. They have the exclusive right to sell or license other persons to sell plants or propagating material of that variety and the exclusive right to produce or license other persons to produce, propagating material of that variety for sale.

The implementation and enforcement these rights are carried out by the National Competent Authority. It is responsible to⁵³²

- a) create and operate a regulatory mechanism to ensure effective protection of community intellectual rights and farmers' rights
- b) identify types of community intellectual rights and farmers' rights
- c) identify and define the requirements and procedures necessary for the recognition of community intellectual rights and farmers' rights
- d) develop a system of registration of items protected by community intellectual rights and farmers' rights according to their customary practices and law, and
- e) issue licenses for the exploitation and commercialization of biological resources, including protected species, varieties or lineages, and community innovations, practices, knowledge and technologies.

532. Article 58

The national inter-sectoral co-ordination body consisting of representatives from relevant public sectors, scientific and professional organizations, non-governmental and local community organizations coordinates and undertakes follow-up actions for proper implementation of the provisions in the model law.⁵³³ A technical advisory body supports the work of the national inter-sectoral co-ordination body.⁵³⁴ The national information system established under the model law⁵³⁵ compiles and documents information on community intellectual rights, farmers' rights and access to biological resources, community innovations, practices, knowledge and technologies. It also compiles information on piracy of biological resources and Traditional Knowledge and disseminates such information to all relevant and concerned bodies.

4.12.3 REPUBLIC OF THE PHILIPPINES

In Philippines the state has recognized the original rights of indigenous peoples and local communities over plant and genetic resources, traditional medicines, agricultural methods and local technologies which they have discovered and developed through the Community Intellectual Rights Protection Act (CIRPA). The Act makes the communities as owners with primary and residuary title to the (a) the formal or informal communal systems of innovation through which they produce, select, improve and breed a diversity of crop and livestock varieties and (b) the plant varieties, genetic resources, traditional medicines, agricultural practices and devices, and technologies produced through these systems.

It is the policy of the state to document and make a systematic inventory of plant and genetic resources and knowledge originating from

533. Article 61

534. Article 63

535. Article 64

indigenous and local communities.⁵³⁶ The Act recognizes proprietary ownership in the unwritten Traditional Knowledge. The state has to strive to protect and encourage the customary use of biological resources in accordance with traditional cultural practices. Commercial utilization of TK and innovations are possible only with the free and informed consent of its general owners or custodians under terms mutually agreed upon. As per the law, all benefits arising from the knowledge and innovations⁵³⁷ by indigenous and local communities should accrue to their development and welfare and should therefore be equitably shared.

Section 4 of the Act delineates the scope and meaning of community intellectual property. The communities are entitled to hold the property in all perpetuity with primary and residuary title to the property. The intellectual property of the communities includes:

- a) parent strains and genetic material discovered or selected and conserved by local communities, which were used in the development of new plant varieties
- b) seeds and reproductive material selected, cultivated, domesticated and developed by local communities in situ
- c) agricultural practices and devices developed from indigenous material, customs, and knowledge

536. Under section 3 (i) of the Act, indigenous peoples or indigenous groups or cultural communities, refers to a group of people sharing common bonds of language, customs, traditions and other distinctive traits, and who have, since time immemorial, occupied, possessed, and utilized a territory except when such possession is either prevented or interrupted by war, force majeure, displacement or force, deceit or stealth, or other usurpation.

537. As per section 3 (j), innovation refers to the process or products derived from such processes, whether documented in written, recorded, or oral form, which constitute an introduction of new changes, including alteration, modifications, or improvements.

- d) medicinal products and processes developed from the identification, selection, cultivation, preparation, storage and application of medicinal herbs by local communities and indigenous peoples
- e) cultural products from local communities, such as weaving patterns, pottery, painting, poetry, folklore, music, etc., and
- f) all other products or processes not made by a single person or juridical personality, which was discovered through a community process, or when the individual making the innovation does not claim the knowledge as his own, provided, that any individual or juridical personality making such a claim should present proof of innovation or a history leading to the discovery that would justify his claim.

Any group of people living in a geographically defined area with a common history and definitive patterns of relationship can register themselves with the appropriate government agency as a tribal council, foundation, cooperative, people's organization, or any other form of organization and claim community ownership of IP. Failure to form and register an organization, however, will not prejudice its status as custodians of TK.⁵³⁸ A community by virtue of its registration automatically will become the general owners of any form or product of TK. As general owners, they are entitled to collect a justifiable percentage from all profits derived from the commercial use of their TK for a period of ten years. The organization representing the community's interest is entitled to directly receive all benefits. In the absence of such an organization, the benefits will be held in trust by the state which will be released only under the provisions of a legislation enacted in favor of the community.

The state in consultation with the academic experts, communities and nongovernmental organizations take necessary initiatives in providing

538. Section 5

technical and other related forms of assistance in the documentation, identification and characterization of community IP.

As per the Act, all identified and documented community IP are to be entered in the concerned registers. The National Commission on Plant Genetic Resources maintains and updates entries regarding plant varieties and other plant reproductive materials. The National Commission on Plant Genetic Resources records and recognizes the contributions of local communities and indigenous peoples to the development and discovery of new plant varieties and it also provides for the protection of Philippine plant genetic resources from unfair and inequitable exploitation.⁵³⁹ The National Museum maintains a national register of indigenous cultural heritage for registering cultural products and heritage. the Bureau of Patents, Trademarks, and Technology Transfer (BPTTT) maintains and updates a national register of indigenous inventions, designs and utility models which include agricultural practices and devices developed from indigenous material, customs, and knowledge as well as medicinal products and processes developed from the identification, selection, cultivation, preparation, storage, and application of medicinal herbs by local communities and indigenous peoples. BPTTT also has jurisdiction on all other products and processes of community IP which are not covered by the National Inventory of Plant Varieties or the National Register of Indigenous Cultural Heritage.

The Traditional and Alternative Medicine Act, 1997 (TAMA)⁵⁴⁰ is another important legislation in the Philippines enacted to protect knowledge related to traditional medicine.⁵⁴¹ Through this enactment, the state strives to

539. Section 7

540. Republic Act No. 8423

541. Traditional medicine means the sum total of knowledge, skills and practice on health care, not necessarily explicable in the context of modern, scientific philosophical framework, but recognized by the people to help maintain and improve their health towards the wholeness

improve the quality and delivery of health care services to the Filipino people through the development of traditional and alternative health care⁵⁴² and its integration into the national health care delivery system. The Act has provided for the establishment of Philippine Institute of Traditional and Alternative Health Care (PITAHC) to accelerate the development of traditional and alternative health care in the Philippines.⁵⁴³ The objectives of the Act include, *inter alia*,⁵⁴⁴

- a) to promote and advocate the use of traditional, alternative, preventive and curative health care modalities that have been proven safe, effective, cost effective and consistent with government standards on medical practice
- b) to develop and coordinate skills training courses for various forms of traditional and alternative health care modalities
- c) to formulate standards, guidelines and codes of ethical practice appropriate for the practice of traditional and alternative health care as well as in the manufacture
- d) to formulate policies for the protection of indigenous and natural health resources and technology from unwarranted exploitation
- e) to formulate policies to strengthen the role of traditional and alternative health care delivery system, and
- f) to promote traditional and alternative health care in international and national conventions, seminars and meetings

of their being the community and society, and their interrelations based on culture, history, heritage, and consciousness: Section 4 (b).

542. Traditional and alternative health care means the sum total of knowledge, skills and practices on health care, other than those embodied in biomedicine, used in the prevention, diagnosis and elimination of physical or mental disorder. See, section 4 (a).

543. Section 5

544. Section 3

The Act recognizes the indigenous and local peoples' right to own their knowledge of traditional medicine. When such knowledge is used by outsiders, the indigenous societies can require the permitted users to acknowledge its source and can demand a share of any financial return that may come from its authorized commercial use.

The Philippines Indigenous Peoples Rights Act, 1997⁵⁴⁵ recognizes, protects and promotes the rights of indigenous cultural communities/ indigenous peoples by creating a National Commission on Indigenous Peoples and establishing implementing mechanisms for protecting right of indigenous communities. The Act mandates the state to recognize and promote all the rights of Indigenous Cultural Communities/ Indigenous Peoples (ICCs/IPs).

Under the Act, ICCs/IPs refers to a group of people or homogenous societies identified by self ascription and ascription by others, who have continuously lived as organized community on communally bounded and defined territory, and who have, under claims of ownership since time immemorial, occupied, possessed and utilized such territories, sharing common bonds of language, customs, traditions and other distinctive cultural traits.⁵⁴⁶

The enactment establishes the concept of indigenous ownership. The ancestral domains and all resources found therein serves as the material bases of ICC's cultural integrity. The indigenous concept of ownership generally holds that ancestral domains are the ICC's/IP's private but community property which belongs to all generations and therefore cannot be sold.⁵⁴⁷ The ICC has rights to ancestral domains: the rights of ownership and possession of ICCs/IPs to their ancestral domains and the right to claim ownership over

545. Republic Act No. 8371

546. Section 3 (h)

547. Section 5

lands, bodies of water traditionally and actually occupied by ICCs/IPs, sacred places, traditional hunting and fishing grounds, and all improvements made by them at any time within the domains.

The inherent right of ICCs/IPs to self governance and self determination and respect the integrity of their values, practices and institutions is guaranteed under the legislation. ICCs/IPs have the right to participate fully at all levels of decision making in matters which may affect their rights, lives and destinies.⁵⁴⁸ Cultural integrity of ICCs/IPs to preserve and protect their culture, traditions and institutions is also statutorily guaranteed.⁵⁴⁹

The legislation establishes the concept of community intellectual rights. The ICCs/IPs have the right to practice and revitalize their own cultural traditions and customs. The state has to protect and develop the past, present and future manifestations of their cultures. ICCs/IPs have the right of restitution if cultural, intellectual, religious, and spiritual properties are taken without their free and prior informed consent or in violation of their laws, traditions and customs.⁵⁵⁰

Access to biological and genetic resources and to indigenous knowledge related to the conservation, utilization and enhancement of these resources, is permitted within ancestral lands and domains of the ICCs/IPs only with a free and prior informed consent of such communities, obtained in accordance with customary laws of the concerned community.⁵⁵¹

The National Commission on Indigenous Peoples (NCIP) is the primary government agency responsible for the formulation and

548. Section 16

549. Section 29

550. Section 32

551. Section 32

implementation of policies, plans and programs to recognize, protect and promote the rights of ICCs/IPs.⁵¹² The NCIP is responsible to protect and promote the interest and wellbeing of the ICCs/IPs with due regard to their beliefs, customs, traditions and institutions.

4.12.4 PERU

The right of indigenous peoples in their collective knowledge is given statutory recognition in the Peruvian state.⁵⁵² The Peruvian state, for this purpose, has enacted a law introducing a special protection regime for the collective knowledge⁵⁵³ of indigenous peoples⁵⁵⁴ derived from biological resources. The special protection regime for collective knowledge is totally independent of the Peruvian IPR regime. Through this legislation the state has recognized the rights and power of indigenous peoples and communities to dispose of their collective knowledge as they deem fit. However, the special protection regime shall not affect the traditional exchange between indigenous peoples of their collective knowledge.⁵⁵⁵ The law applies only to collective knowledge as opposed to individual knowledge. Knowledge belonging to two or more indigenous peoples is treated as collective knowledge.⁵⁵⁶ It acknowledges that the collective knowledge forms part of the cultural heritage

552. Law N° 27811, published in the Official Journal El Peruano on August 10, 2002

553. Collective knowledge means the accumulated, transgenerational knowledge evolved by indigenous peoples and communities concerning the properties, uses and characteristics of biological diversity.

554. Indigenous peoples as defined in article 2 (a) means aboriginal peoples holding rights that existed prior to the formation of the Peruvian State, maintaining a culture of their own, occupying a specific territorial area and recognizing themselves as such. These include peoples in voluntary isolation or with which contact has not been made, and also rural and native communities. The term “indigenous” shall encompass, and may be used as a synonym of, “aboriginal,” “traditional,” “ethnic,” “ancestral,” “native” or other such word form.

555. Article 4

556. Article 10

of indigenous peoples and as such the collective knowledge is inalienable and infeasible.⁵⁵⁷

The objectives of the law are⁵⁵⁸:

- 4 to promote respect for and the protection, preservation, wider application and development of the collective knowledge of indigenous peoples
- 5 to promote the fair and equitable distribution of the benefits derived from the use of collective knowledge
- 6 to promote the use of the knowledge for the benefit of the indigenous peoples
- 7 to ensure that the use of the knowledge takes place with the PIC of the indigenous peoples
- 8 to promote the strengthening and development of the potential of the indigenous peoples and of the machinery traditionally used by them
- 9 to share and collectively distribute benefits arising out of the use of collective knowledge, and
- 10 to avoid situations where patents are granted for inventions made or developed on the basis of collective knowledge of the indigenous peoples.

Access to collective knowledge for the purposes of scientific, commercial and industrial application is subject to the prior informed consent of the representative organizations of the indigenous peoples possessing collective knowledge. Access for the purposes of commercial or industrial application is regulated through a license agreement. A minimum of the ten per cent of the value of the gross sales resulting from the marketing of goods developed on the basis of collective knowledge is to be set aside for the Fund for the Development of Indigenous People.

557. Article 12

558. Sarah A Laird, "Biodiversity and Traditional Knowledge: Equitable Partnerships in Practice" *Earthscan publications Limited, New York*, (2010), p.386

The legislation has introduced three types of registers for the purpose of registration of the collective knowledge of indigenous peoples: public national register, confidential national register and local register. Through these registers the collective knowledge of indigenous peoples and their rights therein are preserved and safeguarded. The public national register contains collective knowledge in the public domain. The confidential national register is not open for the third parties.⁵⁵⁹ Local registers of collective knowledge can be maintained by the indigenous peoples in accordance with their practices and customs.

The representative organization of indigenous peoples in possession of collective knowledge may, by a written contract, license third parties to use the collective knowledge. The contract must contain provisions for PIC and ABS. However, such licensing will not prevent others from using or licensing the same knowledge.

A fund known as Fund for the Development of Indigenous Peoples and Communities is created for contributing to the comprehensive development of indigenous peoples in Peru through the financing of projects and other activities.⁵⁶⁰ Indigenous peoples have the right to draw on the resources of the fund through their representative organizations for the purpose of development projects.

The indigenous peoples possessing collective knowledge not in the public domain have right to protect the knowledge from disclosure, acquisition or use without their consent.⁵⁶¹ In case of violation of their collective right they can bring infringement actions wherein the burden of proof will be on the defendant.

559. Article 18

560. Article 37

561. Article 42

The Indigenous Knowledge Protection Board established under this special law monitors and oversees the implementation of the protection regime for collective knowledge of indigenous people.⁵⁶² The Office of Inventions and New Technology of the National Institute for the Defense of Competition and Intellectual Property (INDECOPI) maintains and updates the register of collective knowledge of indigenous peoples and register of licenses for the use of collective knowledge. It also assesses the validity of contracts for the licensing of collective knowledge. Any disputes regarding the protection of the collective knowledge of indigenous peoples in Peru is settled in the first instance by the office of INDECOPI.⁵⁶³

4.12.5 ETHIOPIA

Access to Genetic Resources and Community Knowledge, and Community Rights Proclamation, 2006⁵⁶⁴ provides for the rights of Ethiopian communities over genetic resources and community knowledge. The Proclamation covers access to genetic resources found in in situ or ex situ conditions and community knowledge. The Proclamation strives to ensure that the country and its communities obtain fair and equitable share from the benefits arising out of the use of genetic resources. The ownership of genetic resources is vested in the state and the Ethiopian people whereas the ownership of community knowledge is vested in the concerned local community.

The Proclamation reaffirms the local communities' inalienable right to use or exchange among themselves their genetic resources or community knowledge in accordance with their customary practices or norms. The Proclamation vests on the local communities the right to regulate the access to

562. Article 65

563. Article 63

564. No. 482/2006

their community knowledge, inalienable right to use their genetic resources and community knowledge and right to share from the benefit arising out of the utilization of their genetic resources and community knowledge. Any access to the community knowledge is subjected to the prior informed consent of the community. The community may refuse consent for access if the access is detrimental to the integrity of their cultural or natural heritages.

The local communities are entitled to obtain 50% of the benefit shared by the state in the form of money from the benefits derived out of the utilization of their genetic resources. The Proclamation also provides the essential contents of access agreement and enlists the types of benefits the community can receive on permitting access to genetic resources and community knowledge. The benefits include:

- a)** royalty
- b)** research funding
- c)** joint ownership of intellectual property
- d)** employment opportunity
- e)** participation of Ethiopian nationals from the Institute or the relevant institutions in the research based on the genetic resources or community knowledge accessed
- f)** priority to supply the raw material of genetic resource required for producing products there from
- g)** access to products and technologies developed from the use of genetic resource or community knowledge accessed
- h)** training, both at institutional and local communities levels, to enhance local skills in genetic resources conservation, evaluation, development, propagation and use, and
- i)** provision of equipment, infrastructure and technology support.

4.12.6 PANAMA

The Law on the Special Intellectual Property Regime Governing the Collective Rights of Indigenous Peoples for the Protection and Defense of their Cultural Identity and their Traditional Knowledge, 2000⁵⁶⁵ deals with the protection of TK in Panama.

It is enacted to protect the collective rights of intellectual property and Traditional Knowledge of the indigenous communities upon their creations such as inventions, models, drawings and designs, novelties contained in the pictures, figures, symbols, illustrations, old carved stones etc. It also protects the cultural elements of their history, music, art and traditional artistic expressions capable of commercial use, through a special registration system.

The collective rights of the indigenous communities are recognized on traditional dresses, their musical instruments, music, dances or form of performance, oral and written expressions contained in their traditions that constitute their historical, cosmological and cultural expression. These collective rights can be registered by indigenous traditional authorities before the General Office for the Registry of the Industrial Property.

The collective rights of the indigenous communities are recognized on their work instruments and traditional art, as well as the technique for making them, expressed in the national basic materials, through the elements of the nature, their method of process, elaboration, etc.

The Department of Collective Rights and Folkloric Expressions (DIGERPI) grants registration for the collective rights of the indigenous communities. The registration of the collective rights of the indigenous communities is for indefinite duration. The rights of use and

565. Law No. 20 of June 26, 2000

commercialization of the art, crafts and other cultural expressions based on the tradition of the indigenous community are governed by the regulation of each indigenous community, approved and registered in DIGERPI or in the National Copyright Office.

Apart from these legislations, there are other initiatives by many countries to protect their TK and bioresources. Decision 486 on the Biological and Genetic Heritage and Traditional Knowledge deal with protection of TK in Andean Community. Name of indigenous, African American, or local communities, or of such denominations, words, letters, characters, or signs used to distinguish their products, services or methods of processing constitute an expression of culture. Article 3 of the Decision states as under:

“The Member Countries shall ensure that the protection granted to intellectual property elements shall be accorded while safeguarding and respecting their biological and genetic heritage, together with the Traditional Knowledge of their indigenous, African American, or local communities. As a result, the granting of patents on inventions that have been developed on the basis of material obtained from that heritage or that knowledge shall be subordinated to the acquisition of that material in accordance with international, Andean Community, and national law. The Member Countries recognize the right and the authority of indigenous, African American, and local communities in respect of their collective knowledge.”

The National Heritage Resources Act, 1999⁵⁶⁶ introduces an integrated and interactive system for the identification, assessment and management of the national heritage resources in Republic of South Africa. The South African Heritage Resources Agency together with its Council coordinates and promotes the management of heritage resources at national level. The Law of the Republic of Azerbaijan on Legal Protection of Azerbaijani Expressions of Folklore, 2006 extends legal protection to expressions of folklore and protects it from unlawful use. Regional Framework for the Protection of Traditional Knowledge and Expressions of Culture, 2002 has been developed by the Secretariat of the Pacific Community (SPC). It also has drafted Guidelines for developing national legislation for the protection of Traditional Knowledge and expressions of culture based on the Pacific Model Law 2002. UNESCO-WIPO's Model Provisions for National Laws on the Protection of Expressions of Folklore against Illicit Exploitation and other Forms of Prejudicial Action, 1982 is another remarkable endeavor for the protection of TK.

Aboriginal and Torres Strait Islander Protection Act, 1984 and Protection of Moveable Cultural Heritage Act, 1986 protect cultural heritages in Australia. Constitucion Politica de la Republica de Bolivia, 1967; Law for the Protection of Cultural Properties, 1950; Law on the Principles of State Protection of Ethnic Culture, 2006; Historical and Cultural Preservation Act, 1995; Protection of Cultural Properties Act, 2002 and Ordinance for the Protection of Antiquities, 1999 govern the protection of cultural heritage and antiquity in Bolivia, Japan, Lithuania, Palau, Republic of Korea, and Sudan respectively.

566. No. 25 of 1999

Countries like Mongolia,⁵⁶⁷ Mexico,⁵⁶⁸ Malawi,⁵⁶⁹ Republic of Macedonia,⁵⁷⁰ Lithuania,⁵⁷¹ Indonesia,⁵⁷² Ghana,⁵⁷³ Fiji,⁵⁷⁴ Algeria,⁵⁷⁵ Morocco,⁵⁷⁶ Nigeria,⁵⁷⁷ and Tanzania⁵⁷⁸ protect folklore through their respective copyright laws.

There exists in some parts, regional agreements for the protection of Traditional Knowledge of local communities. The Andean Pact, 1996⁵⁷⁹ adopted by Bolivia, Colombia, Ecuador, Peru and Venezuela, empowers the national authority and indigenous communities in each country, as the holders of Traditional Knowledge and resources, to grant prior informed consent in exchange for equitable returns. Similarly, the Association of South East Asian countries agreement respects the sovereignty of each Member State over their biological and genetic resources and recognizes the urgent need to protect these interests from biopiracy. The Asian framework agreement was developed to set minimum standards for determining access to genetic resources. It urges the member states to:

- a) recognize, respect, preserve and maintain the knowledge, innovations and practices of indigenous peoples and local communities embodying traditional lifestyles to their natural resources, including genetic resources

567. Copyright Law of Mongolia, 1993

568. Federal Law on Copyright, 1996

569. Copyright Act, 1989

570. Law on Copyrights and Related Rights, 1998

571. Copyrights and Related Rights, 2003

572. Copyright Law, 2002

573. Copyright Act, 2005

574. Copyright Act, 1999

575. Copyrights and Neighboring Rights Act, 2003

576. Copyright Act, 1999

577. Copyright and Neighbouring Rights Act, 1999

578. Andean Pact Decision 391: Common System on Access to Genetic Resources, 1996

579. Andean Pact Decision 391: Common System on Access to Genetic Resources, 1996

- b)** accord recognition and protection to Traditional Knowledge of indigenous peoples and local communities
- c)** ensure fair and equitable sharing of benefits arising from the utilization of biological and genetic resources at the community, national and regional levels
- d)** not allow the patenting of plants, animals, microorganisms or any parts thereof, and traditional and Traditional Knowledge
- e)** designate a competent national authority to be responsible for formulating and implementing national legislation on access and establishing procedures for the granting of prior informed consent which respect and comply with the customary laws, practices and protocols of indigenous peoples and local communities, and
- f)** establish legal processes to ensure fair and equitable sharing of benefits arising from the use of such knowledge and resources.

As seen above, during the last decade, the protection of biogenetic resources and associated TK has attracted much attention of the international community and the questions of whether and how to protect TK have been of increasing practical concern for national policy makers in many countries. Some countries have ventured to enact specific laws for the protection of TK. The legislative endeavor of these countries provides certain legal mechanism to recognize and protect TK base of the country and rights of indigenous and local communities over their TK.

However, the need to address the issue of violation of TK within the existing IPR regime and the need to afford positive protection to TK call for further development and implementation of TK initiatives at the international

level.⁵⁸⁰ The national initiatives in various countries need to be transformed for reaching a consensus on the protection of TK at international level. Such global consensus would facilitate and ensure better protection of TK. But so far, the initiatives which have been taken are not appearing to be sufficient therefore still protection of Traditional Knowledge is not at par with present intellectual property rights. But these steps are noteworthy which create a platform form for future initiatives which will be taken by concern member states.

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580. Nicolas Gorjestani, *Indigenous Knowledge for Development: Opportunities and Challenges*, Paper presented at UNCTAD Conference on Traditional Knowledge in Geneva, Nov 1, 2000.

CHAPTER-V

TRADITIONAL KNOWLEDGE: AN INDIAN CONTEXT

5.1 ATTEMPTS AT PROTECTION OF TK IN INDIA

5.1.1 LEGISLATIVE MEASURES

India is a biodiversity rich country. It is one of the 17 countries which are known as megadiverse countries⁵⁸¹. These countries, among 194 countries of the world⁵⁸², possess 70 % of world's biodiversity. But India has a distinct identity because India has some of the world's most biodiverse regions. India encompass a wide range of ecozones—desert, high mountains, highlands, tropical and temperate forests, swamplands, plains, grasslands, areas surrounding rivers, as well as island archipelago. It hosts 3 biodiversity hotspots: the Western Ghats, the Himalayas and the Indo-Burma region. These hotspots have numerous endemics species.⁵⁸³ India is very rich ecologically, biologically and culturally. India's genetic variation, ecosystem variation, and species variation is unmatched in the world. India contains a

581. The megadiverse countries are a group of countries that harbour the majority of the Earth's species and are therefore considered extremely bio-diverse. Conservation International identified 17 megadiverse countries in 1998. All are located in, or partially in, tropical or subtropical regions. In 2002, Mexico formed a separate organization focusing on Like-Minded Megadiverse Countries, consisting of countries rich in biological diversity and associated Traditional Knowledge. This organization does not include all the megadiverse countries as identified by Conservation International.

582. The United Nations Environment Program's World Conservation Monitoring Center labels Australia, Brazil, China, Colombia, Ecuador, the United States, South Africa, India, Indonesia, Madagascar, Malaysia, Mexico, Papua New Guinea, Peru, the Philippines, Venezuela and the Democratic Republic of the Congo as megadiversity countries.

583. "Protection of Biodiversity and Traditional Knowledge – The Indian Experience," submission by India at Committee on Trade and Environment Council for Trade Related Aspects of Intellectual Property Rights, WT/CTE/W/156, IP/C/W/198, 14 July 2000, p.1.

great wealth of biological diversity and associated Traditional Knowledge. According to botanical survey of India and zoological survey of India, over 47,000 species of plants and around 89,000 species of animals have been recorded, respectively which make India a repository of natural wealth.⁵⁸⁴ India is rich in almost every category of biodiversity, it has 75,000⁵⁸⁵ identified medicinal plants which are unique to India. One of eighteen megadiverse countries, it is home to 7.6% of all mammalian, 12.6% of all avian, 6.2% of all reptilian, 4.4% of all amphibian, 11.7% of all fish, and 6.0% of all flowering species.⁵⁸⁶ Sixteen thousand and five hundred varieties of rice are cultivated in India. In this way India possesses 7-8 % of earth's biodiversity which is nowhere in the world. India not only has this biodiversity but here exists a rich Traditional Knowledge associated with it and generally, most of the knowledge has been freely accessible to everyone. The way modern intellectual property right regime is growing and expanding its feet, Traditional Knowledge is facing very complex challenges. A comprehensive 'sui generis' legislation is needed for its protection in present IPR regime, which India does not have so far. Now, I shall try to analyze the present legislative protection, which India gives to Traditional Knowledge.

A. THE BIOLOGICAL DIVERSITY ACT, 2002

Since India is a party to the Convention on Biological Diversity, 1999⁵⁸⁷, therefore, it was necessary for India to provide a mechanism in

584. *Id.*

585. "Protection of Biodiversity and Traditional Knowledge – The Indian Experience," submission by India at Committee on Trade and Environment Council for Trade Related Aspects of Intellectual Property Rights, WT/CTE/W/156, IP/C/W/198, 14 July 2000, p.1.

586. http://en.wikipedia.org/wiki/Fauna_of_India#cite_note-Biodiversity_Profile_of_India-2 (Accessed on 12-12-12).

587. The convention recognized for the first time in international law that the conservation of biological diversity is "a common concern of humankind" and is an integral part of the development process. The agreement covers all ecosystems, species, and genetic resources. It links traditional conservation efforts to the economic goal of using biological resources

compliance of CBD. For protection of biodiversity, its sustainable use and to provide equitable benefit sharing arising out of utilization of biogenetic resource was the main aim behind passing of this legislation. The objective of this legislation is given in the Act itself which is as follows:

“An Act 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 resources, knowledge and for matters connected therewith or incidental thereto.”

Moreover in the objects, this Act recognizes the sovereign rights of the States over their biological resources and also states that India is rich in biological diversity and associated Traditional Knowledge. Thus, the Act seeks to fulfill the obligation under CBD.

‘Biodiversity’ has been defined under Section 2(b) of the Act as the variability among living organisms from all sources and the ecological complexes of which they are part, and includes diversity within species or between species and of eco-systems. The Act also defines ‘Biological resources’ to mean plants, animals and micro-organisms or parts thereof, their genetic material and by-products (excluding value added products) with actual or potential use or value, but does not include human genetic material.⁵⁸⁸

sustainably. It sets principles for the fair and equitable sharing of the benefits arising from the use of genetic resources, notably those destined for commercial use. It also covers the rapidly expanding field of biotechnology through its Cartagena Protocol on Biosafety, addressing technology development and transfer, benefit-sharing and biosafety issues. Importantly, the Convention is legally binding; countries that join it ('Parties') are obliged to implement its provisions.

588. Section 2(c) of Biological Diversity Act, 2002

The Act establishes National Biodiversity Authority (NBA)⁵⁸⁹ and State Biodiversity Authority (SBA)⁵⁹⁰. By establishing these authorities, the government seeks to regulate the acts which are prohibited under the Act. These authorities advise the Government on conservation of biodiversity and on selection of biological heritage sites and also take appropriate steps to oppose grant of intellectual property rights in foreign countries, arising from the use of biological resources or associated Traditional Knowledge.⁵⁹¹

NBA regulates access to biological diversity by making its approval mandatory for biodiversity related activities. A foreigner, non-resident Indian as defined in clause (30) of section 2 of The Income-tax Act, 1961 or a foreign company or body corporate need to take permission from the NBA before obtaining any biological resources or associated knowledge from India for research, survey, commercial utilization.⁵⁹² Indian citizens or body corporates need to take permission from the concerned State Biodiversity Board.⁵⁹³ The Act also prohibits access to biological resource and associated knowledge for commercial utilization or for bio- survey and bio-utilization without prior approval of NBA.⁵⁹⁴ Approval of NBA is also mandatory for transferring results of research relating to any biological resource occurring in, or obtained from India for monetary consideration or otherwise to non citizens, non-residents, any company, society, trust, organization, association, institution etc., registered or incorporated outside India or having non-Indian participation in its share capital and/or management. However, publication of research papers or dissemination of knowledge in any seminar or workshop is

589. Section 8 of Biological Diversity Act, 2002

590. Section 22 of Biological Diversity Act, 2002

591. Section 18 of Biological Diversity Act, 2002

592. Section 3 of Biological Diversity Act, 2002

593. Indian citizens or body corporates need to take permission from the concerned State Biodiversity Board.

594. Sections 3 and 19 of Biological Diversity Act, 2002

exempted provided such publication is in conformity with Central Government Guidelines made in this regard.⁵⁹⁵ Collaborative research projects are exempted from the purview of this provision.

Further this legislation provides that if the patent or any other form of intellectual property rights is sought to be obtained which is based upon the information or the research on biological resource of India, no application in this regard can be made without the approval of NBA.⁵⁹⁶

If NBA gives permission to utilize the biological resource or permits an intellectual property right over it, NBA is bound to ensure equitable benefit sharing arising out of utilization of such biological resource with the mutually agreed terms and conditions between persons applying for such approval, local bodies concerned and the benefit claimers.⁵⁹⁷

This ensured benefit sharing can be in form of money or in form of a non- monetary gain or by way of both. Non monetary benefits may include provisions for:

- a) grant of joint ownership of intellectual property rights to NBA, or where benefit claimers are identified, to such benefit claimers
- b) transfer of technology
- c) association of production, research and development units in such areas which will facilitate better living standards to the benefit claimers
- d) association of Indian scientists, benefit claimers and the local people with research and development in biological resources and bio-survey and bio-utilization and

595. Section 4 of Biological Diversity Act, 2002

596. Section 6 and 19 of Biological Diversity Act, 2002

597. Section 21(1) of Biological Diversity Act, 2002

- e) setting up of venture capital fund for aiding the cause of benefit claimers.⁵⁹⁸

In the same manner Act, establishes A State Biodiversity Board at State level. This board gives advice to the state government on matters relating to the conservation of biodiversity, sustainable of its components and equitable sharing of benefits arising out of the utilization of biological resource and to regulate by biological resources and (b) regulate by granting of approvals or otherwise requests for granting of approvals or otherwise requests for commercial utilization or bio-survey and bio-utilization of any biological resource by Indians.⁵⁹⁹

If any Indian citizen, organization, association or body corporate wants to undertake any research or seeking for a similar thing which is based upon the knowledge related to biological resource or the knowledge associated with it, prior approval of State Biodiversity Board is required. While granting approval on such research, the State Biodiversity Authority may consult the local bodies concerned and may prohibit or restrict any activity detrimental or contrary to the objectives of conservation and sustainable use of biodiversity or equitable sharing of benefits.⁶⁰⁰

This legislation also makes a provision for establishment of Biodiversity Management Committee (BMC). As per the Act, the local bodies constitute the BMC within their area of jurisdiction for the purpose of promoting conservation, sustainable use and documentation of biological diversity⁶⁰¹ including preservation of habitats, conservation of land races, folk varieties and cultivars, domesticated stocks and breeds of animals, micro-

598. Section 21(2) of Biological Diversity Act, 2002

599. Section 22 of Biological Diversity Act, 2002

600. Section 24 of Biological Diversity Act, 2002

601. Section 41 of Biological Diversity Act, 2002

organisms and chronicling of knowledge relating to biological diversity. The BMC consists of a Chairperson, and six persons nominated by local bodies, including 1/3rd women and 18% SC/ST. The main function of BMC is to prepare, maintain and validate People's Biodiversity Register (PBR) in consultation with the local people. The BMC is to maintain a Register giving information about the details of biological resources and Traditional Knowledge available within the jurisdiction of BMC. It also gives advice on any matter referred to it by the State Biodiversity Board or Authority for granting approval, to maintain data about the local vairs and practitioners using the biological resources. BMC may levy charges by way of collection of fees from any person for accessing or collecting any biological resource for commercial purposes from areas falling within its territorial jurisdiction.⁶⁰²

This statute also empowers the central government to adopt measures for the preservation and conservation of biodiversity and associated knowledge in consultation with respective State government. The central government can notify any species as a threatened species, which is on the verge of extinction or likely to become extinct in the near future and prohibit or regulate collection thereof for any purpose and take appropriate steps to rehabilitate and preserve those species.⁶⁰³ The State governments are also empowered to notify, in consultation with the local bodies areas of biodiversity importance as biodiversity heritage sites.⁶⁰⁴ The central government can designate any institution as the repositories in consultation with the NBA to keep in safe custody the biological materials including voucher specimens deposited with them.⁶⁰⁵ Moreover, the central government is directed to develop national strategies, plans, programmes for the

602. Section 41 (3) of Biological Diversity Act, 2002

603 . Section 38 of Biological Diversity Act, 2002

604. Section 38 of Biological Diversity Act, 2002

605. Section 39(1) of Biological Diversity Act, 2002

conservation and promotion and sustainable use of biological diversity including measures for identification and monitoring of areas rich in biological resources, promotion of in situ, and ex situ, conservation of biological resources, incentives for research, training and public education to increase awareness with respect to biodiversity.⁶⁰⁶

This legislation also makes a provision of for the creation of national biodiversity fund⁶⁰⁷, state biodiversity fund⁶⁰⁸ and local biodiversity fund.⁶⁰⁹ The Central Government may, after the appropriation made by Parliament by law in this behalf, pay to the National Biodiversity Authority by way of grants or loans such sums of money as the Central Government may think fit for being utilized for -the purposes of this Act. the Fund shall be utilized for channeling benefits to the benefit claimers, conservation of biological resources and development of areas from, where such biological resources or knowledge associated thereto has been accessed and socio economic development of areas referred to in clause (b) in consultation, with the local bodies concerned.⁶¹⁰

In the same manner The State Biodiversity Fund shall be utilized for the management and conservation of heritage sites, compensating or rehabilitating any section of the people economically affected by restriction imposed under section 37, conservation of biological resources, socio-economic development of such biological resources or knowledge associated thereto has been accessed subject to any approval granted under section 24, in consultation with the local bodies concerned and meeting the expenses incurred for

606. Section 36 (1) of Biological Diversity Act, 2002

607. Section 27 (1) of Biological Diversity Act, 2002

608. Section 32 (1) of Biological Diversity Act, 2002

609. Section 42 of Biological Diversity Act, 2002

610. Section 27 (2) of Biological Diversity Act, 2002

purposes authorized by this Act.⁶¹¹ The Local biodiversity fund shall be used for conservation of biodiversity in the areas falling within the jurisdiction of the concerned local body and for the benefit of the community in so far such use is consistent with conservation of biodiversity or as prescribed by the respective State government.⁶¹²

The offences under this Act are cognizable and non-bailable.⁶¹³ The Act gives protection to the action done in good faith.⁶¹⁴ On violation of the provisions of this Act, it prescribes for imprisonment or fine or both.⁶¹⁵ If any person contravenes any direction or order of the authorities, penal consequences have been set.

The conservation and sustainable use of biological diversity is critical importance of meeting of food, fodder, fiber, health, water and other needs of growing world population for which purpose, access to and sharing of both genetic resources and technologies are essential. It should be determined to conserve and sustainable use of biological diversity for the benefit of present and future generations.. The Act fails to grant ownership of knowledge base to these communities. The concept of ‘prior informed consent’ genetic resources is absent in this legislation. The Act does not lay down any guidelines for this purpose. Act also does not define that what is associated knowledge and the way by which real holders of Traditional Knowledge can be found.

611. Section 32 (2) of Biological Diversity Act, 2002

612. Section 27 (2) of Biological Diversity Act, 2002

613. Sec 58 of Biological Diversity Act, 2002

614. Sec 54 of Biological Diversity Act, 2002

615. Sec 55(2) of Biological Diversity Act, 2002

B. PROTECTION OF PLANT VARIETIES AND FARMERS' RIGHTS ACT, 2001

There is a mandate under TRIPS agreement to protect the plant varieties.⁶¹⁶ There is also a mandate under TRIPs agreement to protect the plant varieties either by way of patent system or by *sui generis* legislation or by both. To comply with this obligation of TRIPs, India enacted 'Protection of Plant Variety and Farmers Right Act, 2001 (PPVFR Act)', which received the assent of the President on the October 30, 2001. This legislation establishes an effective system for the protection of plant varieties, protects the rights of farmers and plant breeders, encourages the development, promotes cultivation of new varieties of plants and stimulates investment for research and development, seeks to facilitate growth of the seed industry and to ensure availability of high quality seeds and planting materials of improved varieties to farmers.

The Act establishes Protection of Plant Varieties and Farmers' Rights Authority⁶¹⁷ and Plant Varieties Registry.⁶¹⁸

There are some salient features of the Act, which may be summarized as follows⁶¹⁹:

- a) Under the provisions of this legislation, extant varieties can also be registered.
- b) This legislation seeks to develop a mechanism for characterization and documentation of varieties which are registered under the Act.

616. Article 27.3 (b) of the TRIPS

617. Sec 3 of Protection of Plant Variety and Farmers Right Act, 2001

618. Sec 12 of Protection of Plant Variety and Farmers Right Act, 2001

619. Sec 9 of Protection of Plant Variety and Farmers Right Act, 2001

- c) It provides for indexing and cataloguing of farmers' varieties and its documentation
- d) It makes cataloguing facilities compulsory for all varieties of plants
- e) It ensures the availability of seeds, of the varieties registered under the Act, to the farmers
- f) It also makes a provision for compulsory licensing if the breeder of such varieties or any other person entitled to produce such variety under the Act does not arrange for production and sale of the seed in the manner as may be prescribed, and
- g) It makes arrangement for collecting statistics with regard to plant varieties, including the contribution of any person at any time in the evolution or development of any plant variety, in India or in any other country, for compilation and publication.

It provides that extant varieties and farmers' varieties can be registered. But these varieties should follow the prescribed criteria which include the criteria of novelty, distinctiveness, uniformity and stability.⁶²⁰ The breeder of the variety, successor of the breeder of the variety, the assignee of the breeder of the variety, farmers or group of farmers or community of farmers claiming to be the breeder of the variety, and or any university or publicly funded agricultural institution claiming to be the breeder of the variety are entitled to apply for the registration of a plant variety.

The breeder or his successor, his agent or licensee after the registration of a variety gets an exclusive right to produce, sell, market, distribute, import or export the variety.⁶²¹ The breeder can authorize any person to exercise his

620. Sec-14 and 15 of Protection of Plant Variety and Farmers Right Act, 2001

621. Section 28 of Protection of Plant Variety and Farmers Right Act, 2001

rights. However, a registered agent or licensee does not possess any right to transfer such rights.⁶²²

The legislation also provides the procedure for determination of benefit sharing. Benefit sharing in the legislation has been defined in following manner:

*“in relation to a variety, means such proportion of the benefit accruing to a breeder of such variety or such proportion of the benefit accruing to the breeder from an agent or a licensee of such variety, as the case may-be, for which a claimant shall be entitled as determined by the Authority under section 26”*⁶²³

If a variety is registered, authority invites claim for benefit sharing in respect of that. Application for benefit sharing can be submitted by any interested person, group of persons or any NGO which may be opposed by the breeder. This matter will be decided by the Authority and if the matter is decided in favour of claimant, he will get the amount of benefit sharing. Initially the breeder will deposit the amount in the national gene fund.⁶²⁴

Researcher's right has also been protected by giving them permission to use the variety for conducting research or experiment.⁶²⁵ Indian farmer's rights have also been protected as they also can get their varieties registered who have bred or developed a new variety. They get same rights as any breeder. A farmer who is engaged in the conservation of genetic resources of land races and wild relatives of economic plants and their improvement through selection and preservation shall be eligible to register his variety for recognition and reward from the Gene Fund provided that material so selected

622. Sec 28(8) of Protection of Plant Variety and Farmers Right Act, 2001

623. Section 2 (b) of Protection of Plant Variety and Farmers Right Act, 2001

624. Section 26 (6) of Protection of Plant Variety and Farmers Right Act, 2001

625. Section 30 of Protection of Plant Variety and Farmers Right Act, 2001

and preserved has been used to donate genes of varieties registered under the Act.⁶²⁶ Moreover, a farmer shall also be entitled to save, use, sow, re-sow, exchange and share or sell his farm produce including seed of a variety protected under the act in the same manner as he was entitled before the coming into force of the Act provided that the farmer shall not be entitled to sell branded seed of a variety protected under the Act.

In this present legislation a liability has been imposed upon the breeder towards the farmer. Where any propagating material of a variety registered under this Act has been sold to a farmer or a group of farmers of any organization of farmers, the breeder of such variety shall disclose to the farmer or the group of farmers or the organization of farmers, as the case may be, the expected performance under given conditions, and if such propagating material fails to provide such performance under such given conditions, the farmer or the group of farmers or the organization of farmers, as the case may be, may claim compensation in the prescribed manner before the Authority and the Authority, after giving notice to the breeder of the variety and after providing him an opportunity to file opposition in the prescribed manner and after hearing the parties, may direct the breeder of the variety to pay such compensation as it deems fit, to the farmer or the group of farmers or the organization of farmers, as the case may be.⁶²⁷

By providing protection to the farmers, the Act protects the knowledge which is traditional and based upon the farming community; the Act also recognizes the importance of their traditional role in developing a new variety. The farming community will have to disclose the source of genetic material and their contribution of the development of new variety while registering the

626. Section 39 of Protection of Plant Variety and Farmers Right Act, 2001

627. Section 39 (2) of Protection of Plant Variety and Farmers Right Act, 2001

new variety. It provides for registration of a variety which has been traditionally cultivated and evolved by the farmers in their fields. This documentation of varieties will prevent unauthorized exploitation of this knowledge.

Moreover, any person or group of persons (whether actively engaged in farming or not) or any governmental or nongovernmental organization may, on behalf of any village or local community in India, file in any centre notified, with the previous approval of the Central Government, by the Authority, in the Official Gazette, any claim attributable to the contribution of the people of that village or local community, as the case may be, in the evolution or any variety for the purpose of staking a claim on behalf of such village or local community. If the centre is satisfied that such village or local community has contributed significantly to the evolution of the variety which has been registered under this Act, it shall report its findings to the Authority and if the authority decides in favour of the claimant, the breeder will be liable to pay the amount of benefit sharing which will be deposited by the breeder of the variety in the Gene Fund.⁶²⁸

The Act establishes a gene fund under the provisions of the Act which aims at preservation, protection and sustainable use of genetic resources.⁶²⁹ If the breeder does not satisfy the requirements of the legislation and fails to give it to the public at a reasonable price, a compulsory license may be granted.⁶³⁰

628. Section 41 of Protection of Plant Variety and Farmers Right Act, 2001

629. Section 45 of Protection of Plant Variety and Farmers Right Act, 2001

630. Sections 47 to 53 of Protection of Plant Variety and Farmers Right Act, 2001

Though the Act directly does not talk about the protection of Traditional Knowledge and aims at the growth of seed industry.⁶³¹ But it protects the Traditional Knowledge existing in the agricultural field. Documentation under the Act gives a defensive protection to agro-biodiversity related knowledge.

C. THE PATENT AMENDMENT ACTS 2002 AND 2005

In compliance of TRIPs, India enacted Patent Act in 1970.⁶³² This Act was amended in 2002 and then in 2005. In section 3 of this Act, a new clause was added which enacts the provisions related to patentable inventions.⁶³³

The clause (p) of section 3 reads as follows:

“an invention which in effect, is Traditional Knowledge or which is an aggregation or duplication of known properties of traditionally known component or components.”

Which clearly prohibits aggregation or duplication of known properties of traditionally known component or components. This provision is directly related to Traditional Knowledge.

Similarly when this Act was amended in 2005, it modified the opposition process. Now it provides for pre grant opposition and post grant opposition.⁶³⁴

Under section 25 (1) of the Act, application for patent may be opposed, after the application is made but before the grant of patent, on the ground of prior knowledge or publicly used in India before the priority date of that claim. In the same manner under section 25 (2) (k), at any time after the grant

631. Rama Sharma, Commentary on Intellectual Property Laws, Wadhwa and Co., Nagpur, Vol. 1, 2007, p.1539.

632. No. 30 of 1970

633. Inserted by Act 38 of 2002, w. e. f. 20-05-2003

634. Act 15 of 2005, w. r. e. f. 01-01-2005.

of patent but before the expiry of a period of one year from the date of publication of grant of a patent, any interested person can apply for opposition before the controller if the knowledge exists in the prior art and invention is anticipated by Traditional Knowledge.

The Act also seeks to prevent the cases of biopiracy. Under the provisions of the Act, the applicant will have to disclose in the complete specification, source or geographical origin of biological material upon which the invention is based. If he fails to comply with this mandatory requirement, there will be fatal consequences to his application. If he does not give complete specification, does not disclose the source or geographical origin of biological material or wrongly mentions the details, his application is liable to be rejected. Non-indication or false indication of biological material is a ground for revocation of a patent.⁶³⁵ Section 64 of the Act provides grounds for revocation of patents. Its section 64 (1)(j) protects the knowledge secretly used in India. Meaning thereby trade secrets related to Traditional Knowledge can also be a ground for revocation of patent application.

By analysis of this Act, I may say that this Act makes an attempt to protect Traditional Knowledge and bio-piracy to a certain extent.

D. THE GEOGRAPHICAL INDICATIONS OF GOODS (REGISTRATION AND PROTECTION) ACT, 1999

The Geographical Indications of Goods (Registration and Protection) Act, 1999 (GI Act)⁶³⁶ is a sui generis Act for protection of geographical indications in India. India, as a member of the WTO, enacted the Act to comply with the TRIPs. The GI tag ensures that none other than those registered as authorized users (or at least those residing inside the geographic

635. Section 64 (1) (p) as inserted by Act 38 of 2002

636. No. 48 of 1999

territory) are allowed to use the popular product name. Darjeeling tea became the first GI tagged product in India, in 2004–05, since then 193 goods had been added to the list as of March 2013. This Act is applicable to natural, agricultural, goods of handicraft, good of industry and manufactured goods.

This Act protects quantity, reputation or other characteristic of the goods and services which is essentially attributable to its geographical conditions. Any association (irrespective of its legal form or composition) of producers or processors working with the same agricultural product or foodstuff, Natural or legal persons (in exceptional cases) is entitled to apply for a registration of a geographical indication or a designation of origin.⁶³⁷ Designations of origin and geographical indications are protectable if they have been entered in the register of protected designations of origin and protected geographical indications. The register is maintained by the European Commission.

Thus this Act not only protects the geographical indications associated with Traditional Knowledge but also promotes them at international level. It also prevents the misuse of the knowledge already registered.

E. THE COPYRIGHT ACT, 1957

The Copyright Act, 1957⁶³⁸ governs the laws & applicable rules related to the subject of copyrights in India. It provides protection to the original works. This work may include literary, artistic, dramatic, musical, cinematographic films and sound recording.⁶³⁹ For getting a copyright the work should be original and must have been expressed in any form.

637. Section 11

638. No. 14 Of 1957

639. Section 13 (1)

Some forms of Traditional Knowledge can be protected in Indian copyright law. For getting a copyright protect, registration is also not required. When the work is original and has been expressed, it gets automatic protection. Sometimes Traditional Knowledge may face difficulty as it is very difficult to identify the real owner of the Traditional Knowledge and Indian copyright does not recognize the community rights. Copyright can be availed for a specific period of time under copyright law, therefore, folk songs etc can not get any protection under copyright law. But certain expressions of folk dances and performances can be protected under section 38 as performers' right. The performers' right has been defined in section 2 which is very wide and includes snake charmer, acrobat, juggler, conjurer, actor, singer etc. The expression 'performance' covers visual or acoustic presentation made live by one or more performers.⁶⁴⁰

F. THE SCHEDULED TRIBES AND OTHER TRADITIONAL FOREST DWELLERS (RECOGNITION OF FOREST RIGHTS) ACT, 2006

The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006⁶⁴¹, is a key piece of forest legislation passed in India on 18 December 2006. In short it is known as Forest Rights Act, the Tribal Rights Act, and the Tribal Land Act. The law concerns the rights of forest-dwelling communities to land and other resources.⁶⁴²

This Act, gives recognition to the forest rights and occupational rights of forest dwelling scheduled tribes and other traditional forest dwellers who have been living in the forests since ages.⁶⁴³

640. Section 2(q)

641. No. 2 of 2007

642. As per section 2 (c), forest dwelling scheduled tribes means the members or community of the scheduled tribes who primarily reside in and who depend on the forests or forest lands for bona fide livelihood needs. It also includes the scheduled tribe pastoralist communities.

643. Section 4 of the Act

Section 3(1) of the Act provides the rights which includes the right to hold and live in the forest land under the individual or common occupation for habitation or for self-cultivation for livelihood by a member or members of a forest dwelling Scheduled Tribe or other traditional forest dwellers; Community rights such as *nistar*, by whatever name called, including those used in erstwhile Princely states, Zamindari or such intermediary regimes; Right of ownership, access to collect, use, and dispose of minor forest produce(includes all non-timber forest produce of plant origin) which has been traditionally collected within or outside village boundaries; Other community rights of uses or entitlements such as fish and other products of water bodies, grazing (both settled or transhumant) and traditional seasonal resource access of nomadic or pastoralist communities; Rights including community tenures of habitat and habitation for primitive tribal groups and pre-agriculture communities; Rights in or over disputed lands under any nomenclature in any State where claims are disputed; Rights for conversion of Pattas or leases or grants issued by any local council or any State Govt. on forest lands to titles; Rights of settlement and conversion of all forest villages, old habitation, unsurveyed villages and other villages in forest, whether recorded, notified or not into revenue villages; Right to protect, regenerate or conserve or manage any community forest resource which they have been traditionally protecting and conserving for sustainable use; Rights which are recognized under any State law or laws of any Autonomous Dist. Council or Autonomous Regional Council or which are accepted as rights of tribals under any traditional or customary law of the concerned tribes of any State; Right of access to biodiversity and community right to intellectual property and Traditional Knowledge related to biodiversity and cultural diversity; Any other traditional right customarily enjoyed by the forest dwelling Scheduled Tribes or other traditional forest dwellers, as the case may be, which are not

mentioned in clauses-1 to 11, but excluding the traditional right of hunting or trapping extracting a part of the body of any species of wild animal.

These can be summarized as:

- a) **Title rights** - i.e. ownership - to land that is being farmed by tribals or forest dwellers as on 13 December 2005, subject to a maximum of 4 hectares; ownership is only for land that is actually being cultivated by the concerned family as on that date, meaning that no new lands are granted⁶⁴⁴
- b) **Use rights** - to minor forest produce (also including ownership), to grazing areas, to pastoralist routes, etc.⁶⁴⁵
- c) **Relief and development rights** - to rehabilitation in case of illegal eviction or forced displacement;⁶⁴⁶ and to basic amenities, subject to restrictions for forest protection⁶⁴⁷
- d) **Forest management rights** - to protect forests and wildlife.⁶⁴⁸

Eligibility to get rights under the Act is confined to those who "primarily reside in forests" and who depend on forests and forest land for a livelihood.⁶⁴⁹ Further, either the claimant must be a member of the Scheduled Tribes scheduled in that area⁶⁵⁰ or must have been residing in the forest for 75 years.⁶⁵¹

Section 3(1)(k) is very significant since it recognizes the traditional forest dwellers' right of access to biodiversity and community right to

644. Section 3(1) of the Act

645. Section 3(1) of the Act

646. Section 3(1) of the Act

647. Section 3(2) of the Act

648. Section 3(1) and 5 of the Act

649. Sections 2(c) and 2(o) of the Act

650. Sections 2(c) and 4(1) of the Act

651. Sections 2(o) of the Act

intellectual property and Traditional Knowledge related to biodiversity and cultural diversity.

Section 6(1) of the Act provides that the gram sabha, or village assembly, will initially pass a resolution recommending whose rights to which resources should be recognized (i.e. which lands belong to whom, how much land was under the cultivation of each person as on 13 Dec 2005, etc.). This resolution is then screened and approved at the level of the sub-division (or taluka) and subsequently at the district level. The screening committees consist of three government officials (Forest, Revenue and Tribal Welfare departments) and three elected members of the local body at that level. These committees also hear appeals.⁶⁵² State Level Monitoring Committees are set up to monitor the process of recognition and vesting of forest rights and to submit to the nodal agency such returns and reports as may be called for by that agency.⁶⁵³

The legislation also attaches certain duties on the holders of forest rights. The holders of any forest right, Gram Sabha and village level institutions in areas where there are holders of any forest right are empowered to (a) protect the wild life, forest and biodiversity (b) ensure that the habitat of forest dwelling scheduled tribes and other traditional forest dwellers is preserved from any form of destructive practices affecting their cultural and natural heritage (d) ensure that the decisions taken in the Gram Sabha to regulate access to community forest resources and stop any activity which adversely affects the wild animals, forest and the biodiversity are complied with.⁶⁵⁴

652. Sections 6(2)-6(6) of the Ac

653 . Section 6 of the Act

654. Section 5 of the Act

Section 4(2) of the Act lays out a procedure by which people can be resettled from areas if it is found to be necessary for wildlife conservation. The first step is to show that relocation is scientifically necessary and no other alternative is available; this has to be done through a process of public consultation. The second step is that the local community must consent to the resettlement. Finally, the resettlement must provide not only compensation but a secure livelihood.⁶⁵⁵

G. THE NATIONAL BIOTECHNOLOGY REGULATORY BILL, 2008

The National Biotechnology Regulatory Bill, 2008⁶⁵⁶ which has been revised many times and lastly in 2013 aims at establishing a National Biotechnology Regulatory Authority of India, which will regulate the uses of biotechnology products including genetically modified organisms (GMOs). On 23 January 2003, India ratified the Cartagena Protocol which protects biodiversity from potential risks of genetically modified organisms, the products of modern biotechnology. The protocol requires setting up of a regulatory body.

Currently, the Genetic Engineering Approvals Committee, a body under the Ministry of Environment and Forests is responsible for approval of genetically engineered products in India. If the bill is passed, the responsibility will be taken over by the Environment Appraisal Panel, a subdivision of the BRAI.⁶⁵⁷ The regulatory body will be an autonomous and statutory agency to regulate the research, transport, import, and manufacture biotechnology products and organisms.

655. Section 4(2) of the Act

656. Press Information Bureau, Government of India, 22 May 2012

657. The Hindu, 9 September 2010, p.6

H. HUMAN GENOME REGULATORY BILL, 2009

India with multicultural backgrounds has great genetic diversity. Indian people like *Jarawas* and *Onges* from Andaman carry some of the longest unbroken lines of genetic ancestry in the world.⁶⁵⁸ This genetic diversity plays a crucial role in our immune system. For example, researchers have found that diabetic and cardiovascular problems are absent in some Indian tribes.⁶⁵⁹ Thus the research in Indian genes is highly demanding in the international drug industry. There have been several instances of the misuse of Indian genes by foreign researchers in agro and pharma industry. Though Indian Council of Medical Research and the Department of Biotechnology (DBT) has issued guidelines they are not often followed.

On this background, to prevent gene robbery from India, the Anthropological Survey of India (ASI) has prepared Human Genome Regulatory Bill, 2009. The new Bill aims mainly at documenting human genetic samples and controlling access to them for research purposes. The following are the main objectives of the bill:

- a) To document human genetic samples
- b) to control access of the samples for research purposes
- c) to ensure that the commercial benefits derived from the research are shared especially with the community that lends the samples
- d) to establish a repository for human genetic samples which allow for hospitals and laboratories affiliated with the programme to lend research samples, and

658. Debarshi Dasgupta, Helix Shielded, "India's Human Gene Bank will Pre-empt Biopiracy," Outlook, 9, March, 2009, p. - 20

659. *Id.*

- e) to preserve, in the repository, samples of smaller tribes, especially those with unbroken genetic lines if they donate the sample voluntarily.

The attempt to reassert control over human genetic samples has also been made in the Assisted Reproductive Technologies (Regulation) Bill, 2008. Still, there is a need for a repository that functions like the national genetic bureau which has already been set up for regulating export of gene samples. The proposed repository envisaged in the Human Genome Regulatory Bill, 2009 can function as a bank for gene samples. At present India does not have a law to regulate export of gene samples of plants and animals for research. The Bill will probably fill up that lacuna and prevent misuse of Indian genetic resources.

5.1.2 PROTECTION OF TRADITIONAL KNOWLEDGE THROUGH DOCUMENTATION

5.1.2.1 DEFENSIVE PROTECTION

According to WIPO documents, the term ‘defensive protection’ when applied to Traditional Knowledge and genetic resources refers to measures aimed at preventing the acquisition of intellectual property rights over Traditional Knowledge or genetic resources by parties other than the customary custodians of this knowledge and resources.⁶⁶⁰ Defensive protection in the context of the patent system hinges on the requirement that inventions be novel (new) and inventive (non-obvious). These criteria are assessed with reference to available prior art: information that was available to the public before the filing or the priority date of a patent application.⁶⁶¹ This has legal and practical aspects. Legally, the criteria concern all information

660. WIPO/GRTKF/IC/6/8, December 15, 2003.

661. WIPO/GRTKF/IC/5/6, July 7-15, 2003.

that is available to the public prior to the filing date or priority date of a patent application.⁶⁶² Defensive protection strategies cover the following two aspects:

1. *A legal aspect:* Ensuring that information is published or documented to meet the legal criteria for prior art in the jurisdiction concerned (this may include, for instance, ensuring that there is a clear date of publication and that the disclosure enables the reader to put the technology into effect).⁶⁶³
2. *A practical aspect:* Ensuring that the information is readily accessible to authorities and patent examiners by being indexed or classified so that it is likely to be found in a search for relevant prior art.⁶⁶⁴ Two important proposals have come from international negotiations to provide defensive protection for Traditional Knowledge through the patent system.⁶⁶⁵ The first requires patent applicants to disclose the origin of genetic resources and associated Traditional Knowledge relevant to an invention and, according to one variant of the proposal, to provide proof that regulations governing the transfer of the resources and associated Traditional Knowledge are in compliance.⁶⁶⁶ The second is to compile databases of published information on Traditional Knowledge for patent examiners to identify potentially novelty destroying prior art.⁶⁶⁷

A. DISCLOSURE OF ORIGIN

The disclosure of origin proposal can be traced to the Convention on Biological Diversity, whereas Article 15 established the basis for access and

662. *Id.*

663. *Id.*

664. *Id.*

665. WIPO/GRTKF/IC/6/8,*op.cit.*, 1

666. *Id.*, 1

667. *Id.*

benefit sharing (ABS) agreements and Article 8(j) required the parties to protect Traditional Knowledge.⁶⁶⁸ This form of protection has three forms:

(1) Weak Form

Disclosure would be encouraged or expected but is not required, and its omission would not disqualify the patent from being granted.⁶⁶⁹

(2) Medium Form

Disclosure of origin would be mandatory.⁶⁷⁰

(3) Strong Form

Going beyond disclosure, the patent application must comply with the CBD's access and benefit-sharing provisions.⁶⁷¹ One way to implement this is to establish a certification of origin system. Applicants would submit official documentation from provider countries proving where the genetic resources and the associated Traditional Knowledge were acquired in accordance with the ABS regulations, including conformity with such obligations as prior informed consent and benefit sharing.⁶⁷² The absence of such a document in a patent application would require the applicant to re-submit. Protection of Traditional Knowledge through the disclosure of origin has raised new questions, especially related to the medium and strong forms of disclosure. Is the compulsory disclosure of origin incompatible with TRIPS? Is disclosure a

668. GOLLIN, Michael A. ICTSD/CIEL/IDDRI/IUCN/QUNO Dialogue on Disclosure Requirements: Incorporating the CBD Principles in the TRIPS Agreement on the Road to Hong Kong WTO Public Symposium, Geneva, 21 April 2005. This document can be found at http://www.iprsonline.org/ictsd/docs/DOO3_Gollin.pdf. (Accessed on 12-12-13)

669. Dutifield, Graham, Protecting Traditional Knowledge and Folklore: A Review of Progress in Diplomacy and Policy Formulation, UNCTAD-ICTSD, p.2 this document can be found at <http://red.pucp.edu.pe/ridei/buscador/files/34.pdf>. (Accessed on 12-12-13)

670. *Id.*

671. *Id.*

672. *Id.*

good idea?⁶⁷³ Since the weak form is only an appeal to consider the disclosure of origin as part of a patent application, it is clear that the application of disclosure of origin is not a problem. But this is not the case with the medium and strong forms, as these establish another substantive condition under which the disclosure of origin would be more difficult to reconcile with the established patent system (TRIPS).⁶⁷⁴

To one legal expert, the main issue is what the consequences of non-compliance with a disclosure requirement would be for the patent holder.⁶⁷⁵ If the consequences included a rejection of the application or a post-grant revocation, there would be a conflict.⁶⁷⁶ To avoid this conflict, the experts suggest that framing the disclosure requirement as a condition for enforcement could be adopted multilaterally in the framework of WIPO and then, perhaps, be incorporated into TRIPS.⁶⁷⁷

Disclosure of origin as a form of protection against the misuse of Traditional Knowledge still raises the question as to whether the protection will be effective, considering the patent applicant will still try to avoid including a certificate origin of materials used in the invention, as this would put a burden on patent applicants in preparing their patent applications.

B. TRADITIONAL KNOWLEDGE, DATABASES AND PRIOR ART

Databases are important sources of information about prior art for authorities reviewing patent applications when determining whether they achieved the level of novelty and inventiveness necessary for granting

673. *Id.*

674. *Id.*

675. *Id.*

676. *Id.*

677. *Id.*

intellectual property protection.⁶⁷⁸ Databases are a systematized collection of information developed for public or private use.⁶⁷⁹ In order that databases (digital databases or publication) meet the requirements of prior art, the disclosing organisation, community or individual should consider certain practical guidelines on how they publish.⁶⁸⁰ This guideline should include, for example, clear publication dates, the medium and the language of publication, content of disclosure, availability to the public, timing of publication and management of rights arising from publication.⁶⁸¹ Establishing databases for Traditional Knowledge does not amount to acknowledge the legal rights of the Traditional Knowledge owner. This activity is different from registry system.

According to Downes and Laird, a registry is not merely a list of databases designed to provide information to users. Instead, it is a list or database into which people put information in order to gain legal rights related to that information. ‘Registering’ something in registry ‘puts it in the record’ and puts the public ‘on notice’ that the registrant asserts a claim.⁶⁸² The establishment of a Traditional Knowledge database has led to other proposals. The first proposal incorporates Traditional Knowledge in the public domain into more accessible databases for the purpose of aiding patent authorities in a search of prior art. This proposal has led to criticism because such databases will provide increases access to Traditional Knowledge for private sector, without in anyway increasing Traditional Knowledge owner rights over their

678. UNU-IAS Report, *The Role of Registers and databases in the Protection of Traditional Knowledge: A Comparative Analysis*, United Nations University Institute of Advanced Studies (UNU-IAS). 2003.

679. *Id.*

680. WIPO/GRTKF/IC/5/6, July 7 to 15, 2003 p.9

681. *Id.*

682. D. Downes and S. Laird at al., “Community Registers of Biodiversity Related Knowledge: Role of Intellectual Property in Managing Access and Benefit Sharing,” 1999, UNCTAD Biotrade Initiative.

knowledge.⁶⁸³ The second proposal is the establishment of Traditional Knowledge databases only for the purpose of aiding patent examiners searches for prior art. These databases could be in the form of a Traditional Knowledge digital library or printed publications for patent office's use. India espouses the latter and has been a strong demander of Traditional Knowledge database and has already begun to develop a Traditional Knowledge digital library.⁶⁸⁴ This proposal clearly does not create any incompatibility with the TRIPS agreement. Such databases would be used to improve the inefficiency of prior art searches.⁶⁸⁵

C. ADVANTAGES AND LIMITATIONS OF DEFENSIVE PROTECTION

Over the past few years, the patent system has come under considerable criticism for its failure to prevent the misappropriation of Traditional Knowledge. While there is wide agreement that positive protection of Traditional Knowledge cannot be accomplished through the patent system, consideration is increasingly being given to suggestions to use a patent system as a defensive measure against the misappropriation of Traditional Knowledge.⁶⁸⁶ Since most Traditional Knowledge-related inventions have been granted as a result of lack of prior art, which is a good start for protecting Traditional Knowledge and could effectively document the knowledge that has been passed down orally over the years by using a defensive protection

683. *Id.*

684. *Id.*,4

685. *Id.*,5

686. Ruiz, Manuel, The International Debate on Traditional Knowledge as Prior Art in the Patent System: Issues and Options for Developing Countries, Centre for International Environmental Law, October 2002.

strategy.⁶⁸⁷ Nevertheless, defensive protection still has advantages and limitations.

On the one hand, it may also be true that defensive protection may be more achievable than positive protection. This is because some of the commonly discussed defensive protections are basically enhancements to, or modifications of, existing IPRs (such as databases).⁶⁸⁸ On the other hand, as mention earlier, defensive protection in the form of databases does not amount to acknowledging the legal right of the Traditional Knowledge owner.

5.1.2.2 POSITIVE PROTECTION

While databases can act as instruments for defensive protection through little more than the collation and maintenance of information in a manner that is accessible and complete for patent searches⁶⁸⁹, positive protection requires legal recognition of rights over Traditional Knowledge, either under the existing intellectual property rights (IPR) regime or a sui generis regime.⁶⁹⁰ Positive protection of Traditional Knowledge is the creation of positive rights in Traditional Knowledge that empower Traditional Knowledge holders to promote and protect their Traditional Knowledge.⁶⁹¹ Positive protection may also be granted by customary law and practice or the legal enactment of the indigenous people whereby their rights to regulate their cultural patrimony, whether tangible or intangible, are recognised by national law and policy.⁶⁹²

687. IPpro Services (India) Pvt. Ltd., Traditional Knowledge, 2008, Available at http://www.ipproinc.com/admin/uploads/Traditional_Knowledge_-_Jan_30,_2009_54.pdf, p. 6, (Accessed on 12-12-13).

688. Dutifield, Graham, Protecting Traditional Knowledge and Folklore: A Review of Progress in Diplomacy and Policy Formulation, UNCTAD-ICTSD, p.2, Available at <http://red.pucp.edu.pe/ridei/buscadord/files/34.pdf>, p. 22, (Accessed on 12-12-13).

689. UNU-IAS Report, The Role of Registers and databases in the Protection of Traditional Knowledge: A Comparative Analysis, United Nations University Institute of Advanced Studies (UNU-IAS). 2003.

690. *Id.*

691. WIPO, Traditional Knowledge, <http://www.wipo.int/tk/en/tk/> (Accessed on 12-12-13).

692. *Id.*

A. PROTECTING TRADITIONAL KNOWLEDGE THROUGH INTELLECTUAL PROPERTY

Intellectual property rights (IPRs) are the legal protections given to persons over their creative endeavors and usually give the creator an exclusive right over the use of his/her creation or discovery for a certain period of time.⁶⁹³ Intellectual property protections may include patents, copyrights, trademarks and trade secrets. Intellectual property is codified at an international level through a series of legally binding treaties.⁶⁹⁴ There are some fundamental differences that need to be observed when a legislator wants to protect Traditional Knowledge through an existing IPR regime. The fundamental differences are as follows:

- a) IPRs protect individual property rights, whereas Traditional Knowledge is collective or communal resources.⁶⁹⁵
- b) Traditional Knowledge evolves over a long period of time stretching over generations and may not meet the criteria of novelty or inventive step required for IPRs like patents.⁶⁹⁶
- c) The main problem of Traditional Knowledge protection is misappropriation from pharmaceutical and agricultural companies. Thus, the amendment of an IPR regime should allow the use of Traditional Knowledge while proposing benefit-sharing principle to the

693. TRIPs Material on the WTO Website, available at http://www.wto.org/english/tratop_e/trips_e/trips_e.htm. (Accessed on 12-12-13)

694. Van Fleet, Justin W. and Stephen A. Hansen, *Traditional Knowledge and Intellectual Property Rights: A Handbook on Issues and Options for Traditional Holder in Protecting Their Intellectual Property and Maintaining Biological Diversity*, p. 3 this document can be found at <http://shr.aaas.org/tek/handbook/handbook.pdf>. (Accessed on 12-12-13)

695. Damodaran, A. *Traditional Knowledge, Intellectual Property Rights and Biodiversity Conservation: Critical Issues and Key Challenges*, *Journal of Intellectual Property Rights*, Vol. 13, September 2008, p. 510

696. *Id.*, 510

company/scientist that uses Traditional Knowledge as their basis of invention.

Amending an existing IPR regime in order to accommodate Traditional Knowledge protection could be done easier than creating a *sui generis* regime. However, we have to take in to consideration that an IPR regime has national character. The protection under an IPR regime only prevails in the country where the protection is given. This limitation could not address the issue of cross-border misappropriation.

B. SUI GENERIS LAW

Some countries proposed *sui generis* protection systems as an alternative to protect Traditional Knowledge. This system has been applied for plant varieties.⁶⁹⁷ A *sui generis* regime for the protection of Traditional Knowledge will set out legal rules and procedures applicable to Traditional Knowledge and will define what purpose or role a registry will play.⁶⁹⁸

The important elements that must be incorporated when establishing *sui generis* for a national or an international level are as follows⁶⁹⁹:

- a) Establishment of laws to recognize exclusive rights for indigenous people over their Traditional Knowledge;
- b) Registries and/or databases that promote documentation, maintenance and preservation of Traditional Knowledge;
- c) Mechanisms for the monetary and non-monetary compensation of indigenous peoples for the use of their Traditional Knowledge;
- d) Procedures ensuring that Traditional Knowledge is not utilised without prior informed consent of indigenous peoples for the use of their

697. Sardjono, Agus, Hak Kekayaan International dan Pengetahuan Tradisional, Alumni, Bandung, 2006, p. 248

698. *Id.*

699. *Id.*

Traditional Knowledge, including disclosure of origin requirements in patent application procedures;

- e) Utilisation or amendment of existing intellectual property instruments, including copyright, patents, trade secret, plants breeder rights and unfair competition laws in order to secure indigenous people's interest over the product of intellectual effort;
- f) Mechanisms establishing a duty to negotiate in good faith;
- g) Measures for resolving conflicts arising from access to and use of Traditional Knowledge;
- h) Investigation and enforcement powers;
- i) Recognition of the role and importance of customary laws and practices in definition of rules for access and use of Traditional Knowledge, benefit-sharing and resolution of disputes.

C. CUSTOMARY LAW

Another alternative to protect Traditional Knowledge is by adopting customary law as parameter of positive protection and in defining objective, scope, procedures and enforcement of rights over Traditional Knowledge.⁷⁰⁰ The adoption of customary law as an alternative mean of positive protection may occur in a number different ways:

- a) The national law recognises Traditional Knowledge as the cultural patrimony of indigenous people, such as in the case under the Peruvian and Panamanian laws. The concept of cultural patrimony brings with it the notion of cultural integrity and the right of indigenous people to

700. UNU-IAS Report, *The Role of Registers and databases in the Protection of Traditional Knowledge: A Comparative Analysis*, United Nations University Institute of Advanced Studies (UNU-IAS). 2003.

define mechanisms for the protection of their knowledge in accordance with customary laws and practices.⁷⁰¹

- b) The national law and policy specifically granted to a local community or indigenous people's rights to exercise over the biological resources on their traditional territories and/or Traditional Knowledge through the application of customary laws and practices. The example of this practice can be found in South Pacific island states.⁷⁰²
- c) The national authorities are bound by treaty not take any action which will affect the rights of indigenous people concerning their natural resources or their Traditional Knowledge without entering into consultation with them. The example of this case is the Waitangi Treaty in New Zealand.⁷⁰³
- d) There are instances where indigenous rights to self-governance have been recognized by treaty or under national laws, and indigenous people have the opportunity to make their own internal regulations regarding their access to and use of their knowledge.

The example of this practice is Canadian First Nations⁷⁰⁴ through self-government recognition; the indigenous people are entitled to develop their own Traditional Knowledge regime. The adoption of customary law as a tool of Traditional Knowledge protection will prevent lawmakers from providing detailed definitions of Traditional Knowledge that can encompass all communal/indigenous intellectual activities.⁷⁰⁵ However, it is important to note that the adoption of customary law in regulating Traditional Knowledge by giving recognition to a local community and/or indigenous people will

701. *Id.*

702. *Id.*

703. *Id.*

704. *Id.*

705. *Id.*

create a lot of customary law systems as there are many local communities and indigenous peoples.

D. ADVANTAGE AND LIMITATION OF POSITIVE PROTECTION

A positive protection is the ideal protection for Traditional Knowledge. It not only gives the recognition and reward to the Traditional Knowledge holder but, at the same time, the company or scientist still has the opportunity to use Traditional Knowledge as the basis of initial invention. In addition, positive protection addresses the issue of inappropriate acquisition for the commercial use of Traditional Knowledge. However, in order to make positive protection effective, national action is not enough since it has limitations on enforcement issues. Many countries are currently debating how to best deal with the protection, preservation and promotion of Traditional Knowledge at national, regional and multilateral levels.⁷⁰⁶ In this context, it must be noted that there are considerable differences among countries with respect to Traditional Knowledge. Thus, it is unlikely that a ‘one size fits all’ approach would be able to adequately overcome these differences.⁷⁰⁷ Effective positive protection is likely to require a completely a new approach and its development will require the very active and committed participation of many governments.⁷⁰⁸

5.1.2.3 INDIAN INITIATIVES FOR DEFENSIVE POTECTION

1. Preparation of village-wise Community Biodiversity Registers (CBRs) for documenting all knowledge, innovations and practices has been undertaken in a few states.

706. Tawarog, Sophia DR, Preserving, Protecting and Promoting Traditional Knowledge: National Action and International Dimensions this document can be found at www.unctad.org/trade_env/test1/meetings/tk2/twarog.pdf. (Accessed on 12-12-13).

707. *Id.*

708. Dutifield, Graham, Protecting Traditional Knowledge and Folklore: A Review of Progress in Diplomacy and Policy Formulation, UNCTAD-ICTSD, p.2, Available at <http://red.pucp.edu.pe/ridei/buscador/files/34.pdf>, p. 27. (Accessed on 12-12-13).

2. State Plan for Kerala has also actively promoted documentation of local knowledge regarding biodiversity in People's Biodiversity Registers (PBRs). One pilot project has been completed in Ernakulum district, in which NGO *Kerala Shastra Sahitya Parishad* played an instrumental role. Another interesting development in Kerala is the development of a benefit-sharing arrangement between the Tropical Botanical Garden Research Institute and the Kani tribe; based on whose knowledge a drug was developed and then marketed.⁷⁰⁹
3. State of Karnataka presents a unique example of NGO initiatives in the formulation of PBRs which proves to be a valuable tool for conservation and sustainable use of biodiversity and the preservation of related knowledge.
4. Efforts of the Centre for Ecological Sciences, Indian Institute of Science, Bangalore, were the pioneering effort in this field. By mid 1998, 75 Plant Biodiversity Registers had been established in 10 states with the help of Indian Institute of Science and others.
5. 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

709. Anuradha, R.V.; Taneja, Bansuri & Kothari, Ashish. Experiences with biodiversity policy-making and community registers in India. <http://bks8.books.google.co.in/books?id=dbsqUVZ8JpIC>, Available at (Accessed on 04-09-13).

and indigenous knowledge. Medicinal plants and knowledge related thereto was sought to be documented with the help of educated tribal youth. Elders in the village, medical practitioners and traditional healers were consulted in the collection and understanding of the information.⁷¹⁰

6. Research Foundation of Science, Technology and Ecology (RFSTE) initiated a movement called the *Jaiv Panchayat: Living Democracy* in early 1999. Activists from RFSTE and Navdanya have been interacting with local villagers in different parts of India (their strongest presence being in Uttar Pradesh) to constitute informal community-level institutions called Jaiv Panchayats, comprising volunteers from a village. The first *Jaiv Panchayat* to complete the register was in Agasthyamuni village, Garhwal district, Uttar Pradesh, where on 5 June 1999, the CBR prepared by the local people was presented.⁷¹¹
7. SRISTI (Society for Research and Initiatives for Sustainable Technologies and Institutions) based in Ahmedabad, has been involved in documenting innovation developed by individuals at the village level. The initiative is known as Honeybee Network, which documents the elements of biodiversity as well as their uses and in particular innovation surrounding these elements. This network has been growing since the late 1980s.⁷¹²
8. Efforts of *Kalpavriksh* and *Beej Bachao Aandolan* (Save the Seeds Campaign), Tehri-Garhwal, UP— *Kalpavriksh*, in collaboration with the villagers in Jardhar of the Tehri-Garhwal district of UP, initiated an

710. Protection of indigenous knowledge of biodiversity. http://www.genecampaign.org/home_files/Gene_Briefing/IK_Technical_Report.pdf (Accessed on 12-12-14).

711. Jaiv Panchayat-living democracy. <http://www.navdanya.org/campaigns/jaiv-panchayat> (Accessed on 13-11-13).

712. Honeybee network. <http://www.sristi.org/hbnew/boutus.php> (Accessed on 14-11-14).

exercise in 1995 to document the various bioresources used by the community and conservation practices. The members of the *Beej Bachao Aaandolan*—a network of local farmers, who have been involved for a number of years now in reviving and spreading indigenous crop diversity, actively collaborated with the *Kalpavriksh* members. By mutual agreement between *Kalpavriksh* and the villagers, it was decided that a copy of the register would be kept in the village and another copy would be kept by *Kalpavriksh*, and that all the information in the register can be used and distributed only with the consent and knowledge of the villagers.⁷¹³

5.1.2.4 TKDL AS DEFENSIVE AND POSITIVE PROTECTION MECHANISM

Many countries, such as India, are struggling to protect Traditional Knowledge (TK) against exploitation, primarily in the pharmaceutical sector.⁷¹⁴ The granting of wrong patents linked to traditional medicines, which are either based on what is already a part of the Traditional Knowledge of the developing world or a minor variation thereof, has caused great concern in the developing world.⁷¹⁵ The misappropriation of Traditional Knowledge and the bio-piracy of genetic resources are also a great concern to many countries and indigenous and local communities, and while these issues have been taken up within various multilateral forums such as the convention on biological diversity (CBD), the TRIPs Council of the World Trade Organization, and at

713. WTO Committee on Trade and Environment. Protection of Biodiversity and Traditional Knowledge: The Indian experience. http://commerce.nic.in/wto_sub/Environ/sub_Environ-W198.htm (Accessed on 03-11-13).

714. European Patent Office, India's Traditional Knowledge Digital Library (TKDL), A Powerful Tool for Patent Examiner, this document can be found at <http://www.epo.org/news-issues/issues/traditional.html>. (Accessed on 14-11-14).

715. Gupta, V.K, Traditional Knowledge Digital Library, Asia-Pacific Cultural Centre for UNESCO.

the World Intellectual Property Organization (WIPO), a global framework to protect Traditional Knowledge has not yet been established.⁷¹⁶

In order to avoid wrongly granting patents, India has amended its Patent Act (Indian Patent Act 1970). The amendments to Section 25 and Section 64 provide additional grounds for opposing or revoking a patent on the grounds that what is claimed as an invention is already known within the realm of Traditional Knowledge.⁷¹⁷ Besides amending its Patent Act, in 2001 India established a Traditional Knowledge Digital Library (TKDL). The TKDL aims to: (1) record Traditional Knowledge in digital form and link it to an internationally accepted patent classification system for ease of searching and information retrieval⁷¹⁸, (2) make Traditional Knowledge accessible to the patent office – not only the Indian patent office, but patent offices in other countries in order to prevent the misappropriation of Indian Traditional Knowledge, as there is no single international framework to regulate and protect the use of Traditional Knowledge, and (3) reduce Indian Traditional Knowledge misappropriation, especially by pharmaceutical and biotechnology companies.

This approach was taken after a legal battle waged by the council of Scientific and Industrial Research (CSIR) in India asked for a re-examination of patent No. US 5 401 504, which was originally granted for the wound-

700. Protecting Traditional Knowledge from Biopiracy, Available at http://www.wipo.int/meetings/en/2011/wipo_tkdl_del_11/pdf/tkdl_gupta.pdf (Accessed on 14-11-14).

717. Dewan, Mohan, The Realities of Traditional Knowledge and Patent in India, Intellectual Property Watch, 27 September 2010, Available at <http://www.ip-watch.org/weblog/2010/09/27/the-realities-of-traditional-knowledge-and-patents/>, (Accessed on 14-11-14).

718. Udgaonkar, Sageeta, The Recording of Traditional Knowledge: Will it Prevent “Biopiracy”? Current Science, Vol 82 No.4. February 2002. This document can be found at <http://www.ias.ac.in/currsci/feb252002/413.pdf>, (Accessed on 14-11-14).

healing properties of turmeric and was filed by two U.S.-based Indians.⁷¹⁹ Later, the United States' Patent and Trademark Office (USPTO) revoked the patent on the grounds that the patent did not fulfil the novelty requirement, as turmeric's ability heal wounds has been known in India for centuries. Another USPTO patent revocation case based on the absence of novelty, was the patent granted to the W.R. Grass Company for neem.⁷²⁰

Establishing a database in the form of the TKDL was conducted in India for a number of reasons:

- a) It has been observed that in the past few years, patents have been wrongly granted to Traditional Knowledge related inventions that do not fulfil the requirements of novelty and inventive step, particularly due to the existence of relevant prior art. For instance, this has happened in the case of turmeric, Neem, Basmati, etc.⁷²¹
- b) The practical obstacle underlying the issue, was that patent examiners could not search relevant Traditional Knowledge as prior art, because they did not have access to Traditional Knowledge information in their classified non-patent literature. The primary reason for this non-accessibility is that Indian Traditional Knowledge exists in local languages such as Sanskrit, Urdu, Arabic, Persian, Tamil, etc., which either was not available or was not understood by patent examiners. TKDL breaks the language and format barrier and makes this information available in English, French, Spanish, German and

719. Dewan, Mohan, The Realities of Traditional Knowledge and Patent in India, Intellectual Property Watch, 27 September 2010, this document can be found at <http://www.ip-watch.org/weblog/2010/09/27/the-realities-of-traditional-knowledge-and-patents/>, (Accessed on 14-11-14).

720. *Id.*

721. TKDL:F&Q, <http://www.tkd1.res.in/tkd1/Langdefault/common/Faq.asp?GL=Eng#q3> (Accessed on 14-11-14).

Japanese in the patent application format, which is easily understandable by patent examiners. TKDL is thus a tool that provides defensive protection to the rich Traditional Knowledge of India.

- c) Opposing a patent granted by a patent office is extremely costly and time consuming⁷²², taking, on average, five to seven years and costing between 0.2-0.6 million U.S. dollars.⁷²³ Today Traditional Knowledge Digital Library capable of protecting (0.226 million) formulation similar to those neem and turmeric. One could only imagine the cost of protecting 0.226 million formulation it will cost 0,2 million US\$ medicinal formulation in the absence of TKDL. Not only the cost that need to spend in order to opposing wrong patent grant but also material damage caused by the block of market access of Traditional Knowledge because of wrong patent grant.

5.1.2.5 INDIAN TRADITIONAL KNOWLEDGE DIGITAL LIBRARY

Following these experiences of wrongful patenting and the expensive battle to oppose a patent grant, the TKDL project was formally established in a memorandum of understanding between the Department of Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy (Ayush) (erstwhile Department of Indian System of Medicine and Homoeopathy (ISM&H) and the National Institute of Science Communication (NISCOM) in order to prevent the further misappropriation of disclosed Traditional Knowledge through similar wrong patents in the future.⁷²⁴

The TKDL project involves the documentation of tradition

722. Protecting Traditional Knowledge from Biopiracy, this document can be found at http://www.wipo.int/meetings/en/2011/wipo_tkdl_del_11/pdf/tkdl_gupta.pdf (Accessed on 12-12-14).

723. *Id.*

724. *Id.*

knowledge publicly available in the form of existing literature related to Ayurveda, Unani, Siddha and Yoga in a digitised format in five international languages (English, German, French, Japanese and Spanish). It now contains over 34 million pages.⁷²⁵ The TKDL provides information on Traditional Knowledge in a country, in five languages and formats understandable by patent examiners at the International Patent Office (IPOs), so as to prevent the granting of erroneous patents¹⁹⁷. Current status of transcription of the traditional medicine formulation in the Traditional Knowledge Digital Library is given in the following table⁷²⁶ :

Discipline	No. of texts (including volumes) used for transcription	Transcribed
Ayurveda	75 books	97,337
Unani	10 books	1,75,150
Siddha	50 books	23,016
Yoga	15 books	1,680
Total	150 books	2,92,662

* * * * *

725. WIPO Tries to Judge India's Traditional Knowledge Digital Library Success, ABC Live, 28 March 2011. <http://abclive.in/investigative-news/social-investigation/113-wipo-tries-to-judge-india-traditional-knowledge-digitallibrary-success-.html>. (Accessed on 15-01-15).

726. <http://www.tkd1.res.in/tkd1/langdefault/common/Abouttkdl.asp?GL=Eng> (Accessed on 15-01-15).

CHAPTER-VI

LEGISLATIVE PROTECTION OF TRADITIONAL KNOWLEDGE (PROPOSED TEXT)

6.1 BACKGROUND

Despite all initiatives taken by India, some experts still suggest that a *sui generis* system separate from the existing IPR system should be designed to protect the Traditional Knowledge of the local and indigenous communities of India.⁷²⁷ However, the parameters, elements and modalities of a *sui generis* system are still being worked out.⁷²⁸

The Biodiversity Act only mentions the fact that Traditional Knowledge protection is an agenda which should be taken up by the Central Government. The Plant Variety Act is much more specific but limits itself to its focus on farmers' rights which does not take into account Traditional Knowledge in a broader sense. In an attempt to foster better protection of Traditional Knowledge at the national level, two private proposals have been put forward in the past years. This section examines these two draft Bills in turn.

Chronologically, the first is the Traditional Knowledge (Preservation and Protection) Bill 2000. It seeks to achieve the protection of Traditional

727 . www.law.ed.ac.uk/ahrc/files/67_varkeytraditionalknowledgeinindia03.pdf, (Accessed on 15-01-13).

728. www.unctad.org/trade_env/test1/meetings/delhi/backgroundtkjha.doc, (Accessed on 15-01-13).

Knowledge in the public domain from unauthorised appropriation and to facilitate collective management of Traditional Knowledge. This analysis considers exclusively novel aspects of the collective management since defensive protection has already been covered above. The main innovative features of the 2000 Bill is to provide for a multi-layered management of Traditional Knowledge which seeks to put primary control with local people. This Bill focuses only on collective Traditional Knowledge and does not specifically consider Traditional Knowledge innovations. In this sense, its focus is limited to one specific subset of Traditional Knowledge. The main feature of the Bill is the proposal to set up trusts at a number of different levels ranging from communities to panchayats, districts, states and at the national level. The reasons for proposing this multi-layer scheme is the fact that Traditional Knowledge cannot always be located at the level of a particular community or panchayat or even state, as would have been the case with the turmeric patent.

The basic principle of the Bill is to propose that:

‘the exclusive right to manage the Traditional Knowledge shall vest with the respective Trusts identified in the Act based on the nature and extent of the use of the Traditional Knowledge by the members of the society as stated in the Act.’⁷²⁹

This is implemented in practice through different trusts which act as representatives of Traditional Knowledge holders. One of the important elements of this proposal is that it does not provide for individual claims over specific Traditional Knowledge. Traditional Knowledge is considered

729. Section 3(1), Traditional Knowledge Bill 2000.

something which is at a minimum held at the level of a community and managed by representatives of this community through the trust. This has the advantage of bringing clarity for outsiders seeking to access Traditional Knowledge but can in certain circumstances be a rigid system from the point of view of Traditional Knowledge holders. The fact that immediate control is not complete and that the Bill privileges Traditional Knowledge commercial use over local control is evident in the prior informed consent system which is set up. “Where the person who is seeking access fails to obtain the prior informed consent for the commercial exploitation the Traditional Knowledge from the concerned trust, s/he may go and apply to boards which are to be set up at the national and state levels by central government.”⁷³⁰ In other words, where prior informed consent not obtained, the applicant can go above Traditional Knowledge holders and seek consent from a board whose members are not Traditional Knowledge holders.

The second proposal is the Biological Resources and Traditional Knowledge (Protection and Regulation) Bill 2003. This Bill proposes a rather different set of measures to achieve some form of Traditional Knowledge protection. In general, it provides an integrated response to Traditional Knowledge protection concerns. It is proposed as a replacement of the Biodiversity Act and is meant as an amendment to the Plant Variety Act. Conceptually, the introduction of a Bill like this one would have the potential to increase the unity of the legal regime with regard to Traditional Knowledge, for instance, by having only one national authority dealing

730. Section 13(1), Traditional Knowledge Bill 2000.

with all aspects related to biodiversity, plant varieties and Traditional Knowledge.

The main conceptual contribution of this Bill with regard to the positive protection of Traditional Knowledge is the recognition that while the country has sovereign rights over biological resources which can be opposed to other countries, communities which can be associated with a biological resource or Traditional Knowledge have “independent inalienable ownership rights over that biological resource or Traditional Knowledge”.⁷³¹ It is only in cases where the origin of the resource or knowledge cannot be identified that the rights rest solely at the national level.⁷³²

The rights of communities include the right to commercialise their biological resources or Traditional Knowledge. Benefits arising from the commercial exploitation should only be reaped by members of the community, a condition which follows the model provided by geographical indications in trying to ensure that local interests are not diverted. Communities also get the right to deny or conditionally grant access to biological resources and Traditional Knowledge as well as the right to a share of benefits arising from the use of the resources or knowledge.⁷³³

With regard to the procedure for access, the Bill proposes a system which is more balanced than the current Biodiversity Act. It still offers the national authority a central role in granting permission for access for

731. Section 3(2), Biological Resources and Traditional Knowledge (Protection and Regulation) Bill 2003.

732. Section 3(3), Biological Resources and Traditional Knowledge (Protection and Regulation) Bill 2003.

733. Section 4, Biological Resources and Traditional Knowledge (Protection and Regulation) Bill 2003.

research and commercial use. However, in situations where community Traditional Knowledge is concerned, the national authority only gives the applicant permission to approach the relevant local authority for specific negotiations on access.⁷³⁴

The 2003 Bill is noteworthy for its recognition of the need to introduce a coherent legislative framework because the issues of Traditional Knowledge, biodiversity conservation and use and plant variety protection and farmers' rights cannot be dealt with separately given the significant overlaps between them. It therefore provides an interesting starting point for further discussions on a comprehensive sui generis Traditional Knowledge protection regime. Elements which need further consideration include the relationship between collective and individual rights, the distinction between the protection of existing knowledge and Traditional Knowledge innovation as well as the integration of farmers' rights into a broader scheme for the protection of existing and novel Traditional Knowledge concerning plant genetic resources generally.

6.2 PROPOSED LEGISLATION

Here the researcher makes an attempt to propose a separate and distinct legislation for protection of Traditional Knowledge. The objective of the Model Law is to protect the rights of owners in their traditional knowledge and expressions of culture and to permit tradition-based creativity and innovation, including commercialization thereof, subject to prior and informed consent and benefit-sharing. These resources previously have been regarded, for the purposes of intellectual property law, as part of

734. Sections 24 and 25, Biological Resources and Traditional Knowledge (Protection and Regulation) Bill 2003.

the public domain. The draft of Model Law also reflects the policy that it should compliment and not undermine intellectual property rights. In effect the Model Law establishes a frame work for exploiting TK and TKEC through the use of contract. It contains detailed provisions to ensure that TK and TKEC are only dealt with in a non-customary way after prior and informed consent has been obtained from the traditional owners. It protects moral rights of TK holders as well. It provides for two ways seeking authorisation: directly through a custom owner and indirectly through a Cultural Authority. The Cultural Authority is essentially the administrator of the Model Law. At this point, it should be noted that the current draft is only a starting point and it is envisaged that it will continue to be modified consequent upon the experience in administering the law and in accordance with further international developments. The text of the proposed legislation is as follows:

Traditional Knowledge (Prevention and protection of Traditional Knowledge and expressions of culture⁷³⁵) Bill, 2015

(XXX of 2015)

Chapter 1

Preliminary

1. Short title, extent and commencement-

- a) This Act may be called Traditional Knowledge Act, 2015.
- b) It extends to the whole of India except the State of Jammu and Kashmir.
- c) It shall come into force on such date as the Central Government may, by notification in the official Gazette, appoint.

According to article 27.3 (b) of TRIPs agreement, plant varieties are eligible for protection either through patent protection or a system created specifically for the purpose (“sui generis”), or a combination of the two. India gets an opportunity to protect its traditional knowledge under this article. State

735. Traditional Cultural Expressions: Traditional cultural forms, whether tangible and /or intangible, in which traditional culture and knowledge are expressed, appear or are manifested and comprise the following forms of expressions or combinations thereof:

- verbal expressions, such as stories, epics, legends, poetry, riddles and other narratives, words, signs, names and symbols
- musical expressions such as songs and instrumental music
- expression by action such as dances, plays, ceremonies, rituals and other performances
- tangible expressions such as productions of art in particular drawings, designs paintings (including body-painting) carvings, sculptures, pottery, terracotta, mosaic, woodwork, metal ware, jewelry, baskets, needlework, textiles, glassware, carpets, costumes, handicrafts, musical instruments and architectural forms, which are;
- the products of creative intellectual activity including individuals and communal creativity
- characteristic of a community’s cultural and social identity and cultural heritage and
- maintained, used or developed by such community or by individuals having the right or responsibility to do so in accordance with the customary law and practices of that community.

Intergovernmental Committee (IGC) of WIPO, uses the term ‘Traditional Knowledge’ to refer the entire field of traditional knowledge (TK), genetic resources (GRs) and traditional cultural expressions (TCEs). Therefore, it is suggested to create a holistic legislation so as to encompass its kinds.

wise policy is not good enough to protect traditional knowledge as attempted by Kerala because we cannot categorize traditional knowledge state wise. Moreover, Convention on biological diversity recognizes sovereign rights of state over its resources, therefore, in view of researcher; a national legislation can be a solution to the problem.

2. Definitions

- a) **“authorized user agreement”** means a written agreement entered into under Part 3 or 4 of Chapter 4.
- b) **“customary use”** means the use of Traditional Knowledge or expressions of culture in accordance with the customary laws and practices of the traditional owners.
- c) **“derivative work”** means any intellectual creation or innovation based upon or derived from Traditional Knowledge or expressions of culture.
- d) **“India”** means except the State of Jammu and Kashmir throughout the Act.
- e) **“derogatory treatment”**, in relation to Traditional Knowledge or expressions of culture, includes any act or omission that results in a material distortion, mutilation or alteration of the Traditional Knowledge or expressions of culture that is prejudicial to the honour or reputation of the traditional owners, or the integrity of the Traditional Knowledge or expressions of culture.
- f) **“expressions of culture”** mean any way in which Traditional Knowledge appears or is manifested, irrespective of content, quality or purpose, whether tangible or intangible, and, without limiting the preceding words, includes:
 - i. names, stories, chants, riddles, histories and songs in oral narratives; and

- ii. art and craft, musical instruments, sculpture, painting, carving, pottery, terra-cotta mosaic, woodwork, metalware, painting, jewellery, weaving, needlework, shell work, rugs, costumes and textiles; and
 - iii. music, dances, theatre, literature, ceremonies, ritual performances and cultural practices; and
 - iv. the delineated forms, parts and details of designs and visual compositions; and
 - v. architectural forms.
- g) **“appropriate authority”** means the authority responsible for this Act.
- h) **“moral rights”** are the rights mentioned in section 11.
- i) **“prescribed”** means prescribed by the regulations made under this Act.
- j) **“sacred-secret”** means any Traditional Knowledge or expressions of culture that have a secret or sacred significance according to the customary law and practices of the traditional owners concerned.
- k) **“traditional cultural rights”** are the rights mentioned in sections 5(2) and (3).
- l) **“traditional knowledge”** includes any knowledge that generally:
 - i. is or has been created, acquired or inspired for traditional economic, spiritual, ritual, narrative, decorative or recreational purposes; and
 - ii. is or has been transmitted from generation to generation; and
 - iii. is regarded as pertaining to a particular traditional group, clan or community of people in India; and
 - iv. is collectively originated and held.
- i) **“traditional owners”** of Traditional Knowledge or expressions of culture means:

- i. the group, clan or community of people; or
- ii. the individual who is recognized by a group, clan or community of people as the individual; in whom the custody or protection of the Traditional Knowledge or expressions of culture are entrusted in accordance with the customary law and practices of that group, clan or community.

3. “Customary use” means that customary use of Traditional Knowledge or expressions of culture does not give rise to any criminal or civil liability under this Act.

Abovementioned definitions have been placed with a great care so as to define a particular word in a sense appropriate to the legislation. Generally, terms have been tried to define in the light of TRIPs, CBD and various other international norms, upon which there is general an agreement at the international level. The aim in defining the terms is to give same meaning to a defined term throughout the legislation, to avoid any obscurity and to ensure smooth implementation of the provisions of this legislation

Chapter 2

Traditional cultural rights

4. Holders of traditional cultural rights- The traditional owners of Traditional Knowledge or expressions of culture are the holders of the traditional cultural rights in the Traditional Knowledge or expressions of culture.

5. Meaning of cultural rights-

- 1.** Traditional cultural rights are the rights set out in subsections (2) and (3).

2. The following uses of Traditional Knowledge or expressions of culture require the prior and informed consent of the traditional owners in accordance with section 21(1) or 23(5):

- a) to reproduce the Traditional Knowledge or expressions of culture;
- b) to publish the Traditional Knowledge or expressions of culture;
- c) to perform or display the Traditional Knowledge or expressions of culture in public;
- d) to broadcast the Traditional Knowledge or expressions of culture to the public by radio, television, satellite, cable or any other means of communication;
- e) to translate, adapt, arrange, transform or modify the Traditional Knowledge or expressions of culture;
- f) to fixate the Traditional Knowledge or expressions of culture through any process such as making a photograph, film or sound recording;
- g) to make available online or electronically transmit to the public (whether over a path or a combination of paths, or both) Traditional Knowledge or expressions of culture;
- h) to create derivative works;
- i) to make, use, offer for sale, sell, import or export Traditional Knowledge or expressions of culture or products derived therefrom;
- j) to use the Traditional Knowledge or expressions of culture in any other material form;

if such use is a non-customary use (whether or not of a commercial nature).

3. To avoid doubt, the traditional owners are entitled to use Traditional Knowledge or expressions of culture in the ways mentioned in subsection (2) in the exercise of their traditional cultural rights.

4. Subsection (2) does not apply to the use of Traditional Knowledge or expressions of culture for any of the following:

- a) face to face teaching
- b) criticism or review;
- c) reporting news or current events;
- d) judicial proceedings;
- e) incidental use.

5. A user of Traditional Knowledge or expressions of culture mentioned in paragraphs (4)(a) to (d) must make sufficient acknowledgement of the traditional owners by mentioning them and/or the geographical place from which the Traditional Knowledge or expressions of culture originated.

6. **Material form not required-** Traditional cultural rights exist in Traditional Knowledge and expressions of culture whether or not that Traditional Knowledge or those expressions of culture are in material form.

7. **Duration-** Traditional cultural rights continue in force in perpetuity.

8. **Traditional cultural rights inalienable-** Traditional cultural rights are inalienable.

9. **Additional rights-** The traditional cultural rights in Traditional Knowledge or expressions of culture are in addition to, and do not affect, any rights that may subsist under any law relating to copyright, trademarks, patents, designs or other intellectual property.

10. **Derivative works-**

1) Any copyright, trademark, patent, design or other intellectual property right that exists in relation to a derivative work vests in the creator of the work or as otherwise provided by the relevant intellectual property law.

- 2) If a derivative work, Traditional Knowledge or expressions of culture are to be used for a commercial purpose, the authorised user agreement must:
- a) contain a benefit sharing arrangement providing for equitable monetary or non-monetary compensation to the traditional owners; and
 - b) provide for identification of the Traditional Knowledge or expressions of culture on which the derivative work is based in an appropriate manner in connection with the exploitation of the derivative work by mentioning the traditional owners and/or the geographical place from which it originated; and
 - c) provide that the Traditional Knowledge or expressions of culture in the derived work will not be subject to derogatory treatment.

As discussed earlier that Traditional Knowledge is a word which is used in a broader perspective at international level. The main aim behind suggesting this legislation is to encompass all fields of activities in relation to traditional knowledge. Protection of Traditional Cultural Rights has also become a global issue. Therefore, traditional cultural rights have also been made part of the legislation so that a single legislation can protect the cases of ethno-medicine, cosmetics, cultivated plants, foods, folklore, arts, crafts, songs, dances, costumes and rituals.

Chapter 3

Moral rights

11. Meaning of moral rights-

1. The traditional owners of Traditional Knowledge or expressions of culture are the holders of the moral rights⁷³⁶ in the Traditional Knowledge or expressions of culture.

⁷³⁶ TK and TCRs include the right to produce, publish, perform and to make available on line TK and TKEC. Otherwise, TK and TCRs are inalienable and continue in force in perpetuity. However, as in the

3. The moral rights of the traditional owners of Traditional Knowledge and expressions of culture are:
 - a) the right of attribution of ownership in relation to their Traditional Knowledge and expressions of culture; and
 - b) the right not to have ownership of Traditional Knowledge or expressions of culture falsely attributed to them; and
 - c) the right not to have their Traditional Knowledge and expressions of culture subject to derogatory treatment.
4. The moral rights of traditional owners in their Traditional Knowledge and expressions of culture exist independently of their traditional cultural rights.
5. Moral rights continue in force in perpetuity and are inalienable, and cannot be waived or transferred.

Only legal protection to TK holders is not sufficient, their moral rights must be recognized. The state should ensure a system which promotes respect for traditional knowledge systems; for the dignity, cultural integrity and intellectual and spiritual values of the traditional knowledge holders who conserve and maintain these systems; and for the contribution which traditional knowledge holders have made to the conservation of the environment, to food security and sustainable agriculture, and to the progress of science and technology. Even if TK is commercially sold or licensed but still there are some exclusive rights of TK holders which cannot be separated or terminated at any cost which have been stated above.

western oriented IP systems, the Model Law also provides for the moral rights of authors independent of their TCRs. These rights include the right of attribution; the right against false attribution; and the right against derogatory treatment in respect of TKEC. In the event these rights have been tampered with, the Model Law creates offences and civil actions for contraventions of TKEC.

Chapter 4

Obtaining prior and informed consent⁷³⁷ from traditional owners

Part-1

⁷³⁷ According to general international agreement:

Free: is the absence of coercion and outside pressure, including monetary inducements (unless they are mutually agreed to as part of a settlement process), and “divide and conquer” tactics. It includes the absence of any threats or implied retaliation if the results of the decision are to say “no”.

Prior: is having sufficient time to allow for information-gathering and full discussion, including translations into traditional languages, before a project starts. It must take place without time pressure or constraints that in any way may compromise traditional decision-making structures and processes of the Indigenous Peoples in question. A plan or project must not begin before this process is fully completed and an agreement is reached.

Informed: is having all the relevant information available reflecting all views and positions. This includes the input of traditional elders, spiritual leaders, subsistence practitioners and traditional knowledge holders, with adequate time and resources to consider impartial and balanced information about potential risks and benefits.

Consent: is the demonstration of clear and compelling agreement, in keeping with the decision-making structures of the Indigenous Peoples in question, including traditional consensus procedures. The existence of consent is usually demonstrated by a signed agreement which may include an Indigenous Land Use Agreement, Memorandum of Understanding or Plain English Statement, and a signed Consent Form by the parties.

The UN Declaration explicitly affirms the Right to Free, Prior and Informed Consent and States’ obligations to obtain it in many of its provisions, including: Article 10: affirms that Indigenous Peoples shall not be forcibly removed or relocated from their lands or territories without their Free, Prior and Informed Consent; Articles 19: affirms that states must obtain the Free Prior and Informed Consent of Indigenous Peoples before adopting and implementing legislative or administrative measures which may affect them; Article 29: affirms that Indigenous Peoples must give their Free Prior and Informed Consent before hazardous materials are stored or disposed of on their lands; and Article 32: affirms that states must obtain Free Prior and Informed Consent before the approval of any development project affecting Indigenous Peoples’ lands and resources, “particularly in connection with the development, utilization or exploitation of mineral, water or other resources”.

The principle of Free, Prior and Informed Consent (FPIC) of Indigenous peoples to policies, programs, projects and procedures affecting their rights and welfare is being discussed in a growing number of international, regional and national processes. These processes cover a wide range of bodies and sectors ranging from the safeguard policies of the multilateral development banks and international financial institutions; practices of extractive industries; water and energy development; natural resources management; access to genetic resources and associated traditional knowledge and benefit-sharing arrangements; scientific and medical research; and Indigenous cultural heritage.

The Convention on Biological Diversity (CBD) is one of the most widely accepted international treaties. It is a multilateral environmental agreement dedicated to developing a comprehensive strategy for sustainable development. Its three main objectives, embodied in Article 1, are the conservation of biodiversity, the sustainable use of its components, and the fair and equitable sharing of the benefits derived from the use of genetic resources. In addition, FPIC as a principle has been acknowledged in the Convention on Biological Diversity, with regard to access to and benefit-sharing of genetic resources. Available at https://www.acfonline.org.au/sites/default/files/resources/75%20Free%20Prior%20and%20Informed%20Consent_Jul%2011.pdf (Accessed on 05-05-14).

General

6. **Overview-** This Part sets out the procedure for obtaining the prior and informed consent of the traditional owners to use their Traditional Knowledge or expressions of culture for a non-customary use (whether or not of a commercial nature).

Part-2

Applications for use and identifying traditional owners

7. Application

1. A prospective user of Traditional Knowledge or expression of culture for a non-customary use (whether or not of a commercial nature) may apply to the Cultural Authority to obtain the prior and informed consent of the traditional owners to use the Traditional Knowledge or expressions of culture.

2. The application must:

- a) be in the prescribed form; and
- b) specify the way in which the applicant proposes to use the Traditional Knowledge or expressions of culture; and
- c) state clearly the purpose for which that use is intended; and
- d) be accompanied by the prescribed fee.

3. The Cultural Authority must finalise the application in accordance with this Part within 30 days.

4. If the Cultural Authority does not finalise the application within the period mentioned in subsection (3), the traditional owners are deemed not to have consented to the proposed use.

8. Public notification

1. The Cultural Authority must:

- a)** give a copy of the application to those persons (if any) who it is satisfied are the traditional owners of the Traditional Knowledge or expressions of culture to which the application relates; and
- b)** publish a copy of the application in a newspaper having national circulation stating how interested persons may obtain a copy of the application; and
- c)** if appropriate, broadcast details of the application on radio or television stating how interested persons may obtain a copy of the application.
- d)** Any person who claims to be a traditional owner of the Traditional Knowledge or expressions of culture to which the application relates must advise the Cultural Authority within 28 days after the application is published or broadcasted (whichever is the later). The advice may be given orally or in writing.

2. The Cultural Authority must record in writing the details of any oral or written advice given under subsection (2).

9. Identification of traditional owners

1. If the Cultural Authority is satisfied that it has identified all of the traditional owners it must make a written determination containing such details as to identify the traditional owners.

2. The Cultural Authority must:

- a) publish a copy of the determination in a newspaper having national circulation; and
- b) if appropriate, broadcast details of the determination on radio or television.

10. Uncertainty or dispute about ownership

1. If the Cultural Authority is not satisfied that it has identified all of the traditional owners or that there is a dispute about ownership, the Cultural Authority must refer the matter to the persons concerned to be resolved according to customary law and practice or such other means as are agreed to by the parties.

2. When all of the traditional owners have been identified in accordance with customary law and practice or such means as have been agreed to, the traditional owners must advise the Cultural Authority, and the Cultural Authority must make a written determination containing such details as to identify the traditional owners.

3. The Cultural Authority must:

- a) publish a copy of the determination in a newspaper having national circulation; and
- b) if appropriate, broadcast details of the determination on radio or television.

11. Traditional owners or no agreement about ownership

1. If the Cultural Authority is satisfied that:

- a) no traditional owners can be identified; or
- b) no agreement has been reached on ownership within the period mentioned in section 13(3) after the application was made; the Cultural Authority may, after consultation with the appropriate authority, make a determination that the Cultural Authority is the traditional owner of the

Traditional Knowledge or expressions of culture concerned for the purposes of this Act.

2. If the Cultural Authority enters into an authorised user agreement, any monetary or non-monetary benefits arising under the agreement must be used for traditional cultural development purposes.

Part-3

Authorised user agreements

12. Application to be rejected or negotiations for agreement

1. The traditional owners must decide whether:
 - a) to reject the application; or
 - b) to accept the application and to enter into negotiations for a written authorised user agreement in relation to the application.
2. The traditional owners must advise the Cultural Authority of their decision. The advice may be given orally or in writing.
3. The Cultural Authority must advise the applicant in writing of the traditional owners' decision.

13. Proposed agreement to be referred to Cultural Authority

1. Before entering into an authorised user agreement, the traditional owners must refer the proposed agreement to the Cultural Authority for its comments on the proposed terms and conditions of the agreement.
2. The Cultural Authority may request the applicant and the traditional owners to meet with it to discuss the proposed agreement if the Cultural Authority is, after reviewing the proposed agreement, satisfied that:
 - a) the traditional owners do not have sufficient information to make a full and informed decision about the proposed terms and conditions of the agreement; or

- b) the proposed terms and conditions of the agreement do not adequately protect the Traditional Knowledge or expressions of culture of the traditional owners.

3. The traditional owners may accept, reject or modify any comments made by the Cultural Authority in relation to the proposed agreement.

20. Terms and conditions

An authorised user agreement should include terms and conditions about the following:

- a) sharing of financial and other benefits arising from the use of the Traditional Knowledge or expressions of culture;
- b) compensation, fees, royalties or other payments for the use;
- c) whether the use will be exclusive or non-exclusive;
- d) duration of the use to be allowed and rights of renewal;
- e) disclosure requirements in relation to the use;
- f) the possible sharing by the traditional owners of any intellectual property rights arising from the use of the Traditional Knowledge or expressions of culture;
- g) access arrangements for the traditional owners;
- h) education and training requirements for the applicant;
- i) controls on publication;
- j) specify whether the rights arising under the agreement can be assigned;
- k) choice of law in relation to disputes under the agreement;
- l) respect for moral rights of the traditional owners.

21. Authorised user agreement, and prior and informed consent

1. If a prospective user and the traditional owners enter into an authorised user agreement, the traditional owners are deemed to have given their prior and informed consent to the proposed use.
2. The traditional owners must advise the Cultural Authority and forward to it a copy of the final agreement.
3. The Cultural Authority is to keep a register of authorised user agreements. The register is to be in such form and contain such information as the Cultural Authority determines.

22. No authorised user agreement reached

1. If the traditional owners and the applicant cannot agree on the terms and conditions of an agreement in relation to the application, the traditional owners must advise the Cultural Authority. The advice may be given orally or in writing.
2. The Cultural Authority must advise the applicant in writing that the traditional owners have rejected the proposed authorised user agreement.
3. The Cultural Authority must record in writing the details of any oral or written advice given under subsection (1).

Part 4**Applications not made under this Part****23. Procedure for applications**

1. Nothing prevents a prospective user of Traditional Knowledge or expressions of culture from obtaining the prior and informed consent of the traditional owners without applying to the Cultural Authority under section 13.

2. The prospective user must advise the Cultural Authority that the prospective user has sought the prior and informed consent of the traditional owners.
3. The prospective user must provide the Cultural Authority with a copy of the proposed authorised user agreement between the prospective user and the traditional owners for comment, and advice about other prospective traditional owners.
4. The prospective user must provide a copy of the signed authorised user agreement to the Cultural Authority to be entered in the register (refer subsection 21(3) within 28 days after the agreement comes into force.
5. If a prospective user and the traditional owners enter into an authorised user agreement, the traditional owners are deemed to have given their prior and informed consent to the proposed use.
6. The prospective user cannot contract out of the obligation under subsection (3). If a copy is not provided under subsection (3), the authorised user agreement is null and void.

Chapter 4 of this legislation establishes a cultural authority at National level which will be the principal agency to deal with the transactions in relation to TK. Subordinate agencies may be established at state level and district levels. The prospective user of TK will apply for prior and informed consent before this authority and by a public notification his application will be notified with a purpose to invite objections and for identifying the real beneficiaries. This Cultural Authority will be responsible for an authorized user agreement entered into. In such cases where real TK holders cannot be identified, agreement will be signed by Cultural Authority or any other appropriate authority created for this purpose. Terms and conditions of such agreement should be mutually agreed by both parties and no agreement can

be entered into without the consent of TK holders. Under the provisions of this legislation, the proposed user may obtain prior informed consent directly from the TK holders and then he can proceed for the formalities with the Cultural Authority as per the provisions of this legislation.

Chapter 5

Enforcement

Part 1

Offences

24. Offence in relation to traditional cultural rights

If:

- a) a person makes a non-customary use of Traditional Knowledge or an expressions of culture (whether or not such use is of a commercial nature); and
- b) the traditional owners have not given their prior and informed consent to that use;

the person is guilty of an offence punishable on conviction by a fine as decided by court but not less than Rs. Five lakh or a term of imprisonment not less than five years or both.

25. Offence in relation to moral rights

If:

- a) a person does an act or makes an omission in relation to Traditional Knowledge or an expression of culture that is inconsistent with the moral rights of the traditional owners of that Traditional Knowledge or expression of culture; and

- b) the traditional owners have not given their prior and informed consent to the act or omission;

the person is guilty of an offence punishable on conviction by a fine as decided by court but not less than Rs. Five lakh or a term of imprisonment not less than five years or both.

26. Offence in relation to sacred-secret material

If a person uses sacred–secret Traditional Knowledge or an expression of culture other than in accordance with a customary use, the person is guilty of an offence punishable on conviction by a fine as decided by court but not less than Rs. Five lakh or a term of imprisonment not less than five years or both.

27. Offences in relation to importation and exportation

1. If:

- a) a person imports an article or other thing into India that relates to Traditional Knowledge or expressions of culture of that country; and
- b) the person knew, or ought reasonably to have known, that the article or thing would have contravened the traditional cultural rights or the moral rights of the traditional owners had it been created in India;

the person is guilty of an offence punishable on conviction by a fine as decided by court but not less than Rs. Five lakh or a term of imprisonment not less than five years or both.

2. If:

- a) a person exports Traditional Knowledge or an expression of culture and the export is a non-customary use (whether or not such use is of a commercial nature); and
- b) the traditional owners have not given their prior and informed consent to the export of the Traditional Knowledge or expressions of culture;

the person is guilty of an offence punishable on conviction by a fine not exceeding an amount equivalent to punishable on conviction by a fine as decided by court but not less than Rs. Five lakh or a term of imprisonment not less than five years or both.

Part 2

Civil actions

28. Civil claims

1. If:

- a) a person makes a non-customary use of Traditional Knowledge or an expression of culture (whether or not such use is of a commercial nature); and
- b) the traditional owners have not given their prior and informed consent to that use; the traditional owners may institute proceedings against the person in the first Class Judicial magistrate's Court seeking all or any of the relief set out in section 29.

2. If:

- a) a person does an act or makes an omission in relation to Traditional Knowledge or an expression of culture that is inconsistent with the moral rights of the traditional owners

of that Traditional Knowledge or expression of culture;
and

- b)** the traditional owners have not given their prior and informed consent to the act or omission;

the traditional owner may institute proceedings against the person in the first Class Judicial Magistrate's Court seeking all or any of the relief set out in section 29.

29. Remedies

1. The first Class Judicial Magistrate's Court may grant all or any of the following in relation to proceeding instituted under section 28:

- a)** an injunction;
- b)** damages for loss resulting from the unauthorized use;
- c)** a declaration that the traditional cultural rights of the traditional owners have been contravened;
- d)** an order that the defendant make a public apology for the contravention;
- e)** an order that any false attribution of ownership, or derogatory treatment, of the Traditional Knowledge or expression of culture cease or be reversed;
- f)** an order for an account for profits;
- g)** an order for the seizure of any object made, imported or exported contrary to this Act;
- h)** such other orders as the Court considers appropriate in the circumstances.

2. The first Class Judicial Magistrate's Court in deciding what relief is to be granted may take into account all or any of the following:

- a) whether the defendant was aware or ought reasonably to have been aware of the traditional cultural rights and moral rights of the traditional owners;
- b) the effect on the honour or reputation of the traditional owners resulting from the unauthorised use;
- c) any thing done by the defendant to mitigate the effects of the unauthorised use;
- d) any cost or difficulty that may have been associated with identifying the traditional owners;
- e) any cost or difficulty in ceasing or reversing any false attribution of ownership, or derogatory treatment, of the Traditional Knowledge or expression of culture;
- f) whether the parties have undertaken any other action to resolve the dispute.

Part 3

Defences and other matters

30. Defences

It is a defence to an offence against section 24 or 25, or an action under subsection 28(1) or (2), if a determination has been published under section 15 and the traditional owners specified in that determination have given their prior and informed consent to the use in question.

31. Other mechanisms to resolve disputes

Nothing in this Part prevents the traditional owner or the other person concerned from attempting to resolve a dispute using all or any of the following:

- a) mediation;

- b) alternative dispute resolution procedures;
- c) customary law and practices.

32. Other rights of action and remedies

This Part does not affect any rights of action or other remedies, whether civil or criminal, provided for under other Acts or laws.

Chapter 6

Transitional arrangements

33. Procedure for transitional arrangements

1. Subject to subsections 3(2) and (3), this section applies to a person if, immediately before the commencement of this Act, the person was making a non-customary use of Traditional Knowledge or an expression of culture.
2. The provisions of this Act do not apply to the person during the period of 60 days (“the application period”) starting on the commencement of this Act.
3. During the application period, the person must apply under Chapter 4 to the Cultural Authority to obtain prior and informed consent from the traditional owners to continue to use the Traditional Knowledge or expression of culture.
4. If the person does not apply to the Cultural Authority in accordance with subsection (3), the Act applies to the person on and after the end of the application period.
5. If a person has applied to the Cultural Authority in accordance with subsection (3), the Act continues not to apply to the person until the traditional owners reject the application or enter into an authorised user agreement with the person, whichever first occurs.

Chapter 7

Cultural Authority

34. Designation of Cultural Authority

The appropriate authority may designate an existing or new body to perform the functions of the Cultural Authority in section 33.

35. Functions of Cultural Authority

The functions of the Cultural Authority may include the following:

- a) to receive and process applications under Chapter 4;
- b) to monitor compliance with authorised user agreements and to advise traditional owners of any breaches of such agreements;
- c) to develop standard terms and conditions for authorised user agreements;
- d) to provide training and education programs for traditional owners and users of Traditional Knowledge or expressions of culture;
- e) to develop a Code of Ethics in relation to use of Traditional Knowledge and expressions of culture;
- f) to issue advisory guidelines for the purposes of this Act;
- g) to liaise with regional bodies in relation to matters under this Act;
- h) to maintain a record of traditional owners and/or knowledge and expressions of culture;
- i) if requested to do so to provide guidance on the meaning of customary use in specific cases;
- j) such other functions as are conferred on it by this Act.

Chapter 8

Miscellaneous

36. Regulations

The appropriate authority may make regulations prescribing all matters:

- a)** required or permitted by this Act to be prescribed; or
- b)** necessary or convenient to be prescribed for carrying out or giving effect to this Act.

37. Recognition of other laws

In accordance with reciprocal arrangements, this Act may provide the same protection to Traditional Knowledge and expressions of culture originating in other countries or territories as is provided to Traditional Knowledge and expressions of culture originating in the India.

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CHAPTER–VII

CONCLUSION AND SUGGESTIONS

7.1 SOME UNRESOLVED ISSUES AND OBSCURE AREAS

The way voice for protection of Traditional Knowledge has been raised, it has generated a significant literary material in different international forums. There have been number of international attempts to define the term Traditional Knowledge. However, all these definitions are not exhaustive as to encompass all kinds of Traditional Knowledge. Either these definitions are illustrative or inclusive in nature. So far, there is no universally accepted definition exist at international level at Although, these international conventions, make some efforts to recognize the rights of indigenous people over their Traditional Knowledge but the real and true scope , extent and ambit of the rights are not settled so far.

Some proposals have been initiated either in IPR system or the outside, to protect the rights of Traditional Knowledge holders or the rights of indigenous people. These proposals generally fail to give a clear rationale and objective for its protection. The initiative of any kind for the protection of Traditional Knowledge should be based on some sound definition of Traditional Knowledge; objectives sought for protection and on the appropriateness of the proposal which is given for protection of Traditional Knowledge. Sometimes, IPR may be seen one of the tools to be used for its protection, but IPR has its own limitations and implications should be clearly understood.

Till date, there is no clear formula has been given which can protect all forms of Traditional Knowledge. There are many serious issues associated with Traditional Knowledge that are creating hindrance in giving the Traditional Knowledge legal recognition, protection and enforcement.

7.1.1 SUBMISSION ON DEFINITIONAL ISSUES

There is no any globally agreed definition of Traditional Knowledge exist. Various conventions, international organization and instruments define the term differently.⁷³⁸ In a report of WIPO, it has been said that Traditional Knowledge is highly diverse and dynamic in nature, so it may not be possible and feasible to develop a singular, exclusive and complete definition for 'Traditional Knowledge'.⁷³⁹ There are many issues such as subject matter of TK, problems in identification of TK holders, problems in its implementation and enforcement etc. which are preventing a consensus to be framed at international level. These issued have been addressed one by one in following paragraphs.

Considering that the right of Traditional Knowledge holders should be something akin to intellectual property rights, there is no international agreement on what should be the subject matter of the right. The subject matter is particularly diverse, dynamic, scattered and variable and it is managed and shaped by indigenous, local and cultural factors in contrast with other forms of IP. So, there is a clear need to make a systematic analysis in attempting to clarify the information categories that could be called Traditional Knowledge and sought to be protected. The clarity of the subject

738 . For detailed discussion, see, Chapter 2.

739. WIPO, Intellectual Property Needs and Expectations of Traditional Knowledge Holders: WIPO Report on Fact-Finding Missions on Intellectual Property and Traditional Knowledge (1998-1999) (WIPO, 2001).

matter of Traditional Knowledge is the main thing to be addressed and resolved.

Another important issue is the identification of beneficiaries in relation to the Traditional Knowledge. There is no clear view in relation to the holders of the rights. It is not clear that to whom the rights should be given or who are entitled to be protected for Traditional Knowledge. As discussed previously that it is very difficult to identify the holders of Traditional Knowledge and the rights over the natural resources and knowledge are held by everyone collectively, so the cases are very rare where there is a single beneficiary. So, after making attempt for defining the subject matter, the concern countries will have to try for a mechanism for identifying the holders. Since the owners or the holders of Traditional Knowledge generally belong to economically and educationally backward regions, they may not come forward for seeking protection. This creates a need that the states should initiate for necessary mechanism to identify the holders of Traditional Knowledge and enable them to receive protection. It will be the liability of states to define the rights but while doing so they should define it as broadly as possible so that it can include all concerned beneficiaries and holders of Traditional Knowledge. As the rights over the resource and knowledge are held collectively, questions rotate around how the communities should be defined. They may be defined geographically, ethnically or politically for the purpose of sharing benefits considering the finest benefits to TK holders.

There can be instances where Traditional Knowledge may be held by communities of more than one country. There can also be situations where Traditional Knowledge is held in a country by more than one community or indigenous peoples. At national level also identification of beneficiaries will be a complex task when the knowledge holders are diverse and when the

knowledge is held by more than one community. In such situations, the benefits may be paid into a community fund.

However, the concern was manifested that such funds can have high overheads, with restricted benefits reaching the Traditional Knowledge holders. There is a critique that generally benefits go to research institutions or government departments.⁷⁴⁰ In every case, the beneficiaries must be defined in such a way as to prohibit collection of benefits in few hands and to cover all the concerned.

After dealing with the subject matter and the contents of right, implementation and enforcement of the rights is the next issue to be solved. So far, there is no common consensus among the international community relating the implementation and enforcement mechanisms which can help in enforcing such *sui generis* rights. The problem of disagreement among the international community surrounds mainly as to the (i) Method and modalities for registration of Traditional Knowledge and procedure for its certification (ii) enforcement of ‘prior informed consent’ and ‘benefit sharing’ in the cases of exploitation of Traditional Knowledge. There is main question involved in the registration is that whether there should be a system of certification at international level to ensure prior informed consent or there should be a national one? This question is yet to be settled.

However, a single definition might not determine the scope of subject matter for which protection is sought. This view has been taken in a number of international attempts and instruments dealing with intellectual property

740. Pachico, Douglas, “Implementing farmers' rights in genetic resources: approaches to benefit sharing,” Available at http://biblioteca.universia.net/html_bura/ficha/params/id/3918787.html, (Accessed on 12-10-11), Also see, Report of the International Seminar on “Systems for the Protection and Commercialization of Traditional Knowledge,” Organized by the Government of India and UNCTAD (New Delhi, 3-5 April 2002) Available at http://r0.unctad.org/trade_env/test1/meetings/delhi/Report_New%20Delhi.final.do (Accessed on 12-12-11)

rights. Any international convention or treaties in the field of intellectual property rights do not give a single uniform definition which describes the holistic nature of protected subject matter. For example, the Berne Convention for the Protection of Literary and Artistic Works, 1883 does not establish a complete definition for literary and artistic works rather it presents an inclusive enumeration of subject matters that can be protected under it as original creations.⁷⁴¹

Following the same path, it would be highly expected to have a global planning and strategy of interested and concerned countries as to the subject matters that would be protected under the term Traditional Knowledge. The nations may have two ways: either they can define TK as to give a holistic view - *lato sensu*⁷⁴² or as a specific term representing the subject matter of exact protection aimed at the use of knowledge - *stricto sensu*⁷⁴³. Besides this, we will have to develop a mutually agreed formula as to the nature of Traditional Knowledge and the contents of the right. The prerequisite in defining the Traditional Knowledge is to clearly establish the nature and contents of the information that we want to protect. The definition should consider and keep certain key elements such as (i) the context in which the creation exists (ii) community association, (iii) establishment of link by which the ownership or responsibility of the community and against the community can be ensured and (iv) identification of Traditional Knowledge. Once this criterion and the nature of Traditional Knowledge is clarified, the nations will

741. Aarticle 2 of the Berne Convention, 1886.

742. TK *lato sensu* covers, as WIPO/GRTKF/IC/7/6 defines ‘the ideas and expressions thereof developed by traditional communities and Indigenous peoples, in a traditional and informal way, as a response to the needs imposed by their physical and cultural environments and that serve as means for their cultural identification.’ See, WIPO/GRTKF/IC/7/6 p. 22.

743. TK *stricto sensu* refers to knowledge as such as the object of protection, and traditional cultural Expressions, See, WIPO/GRTKF/IC/7/6 p. 22.

have a wide range of options to protect the Traditional Knowledge, including options for sui generis system.

7.1.2 SUBMISSION ON THE ISSUES OF SUBJECT MATTER

For mounting a system to guard Traditional Knowledge, the primary thing to be done is to spell out the subject matter. Explaining of the subject matter involves (i) developing an satisfactory, agreed and practically obvious definition of TK and (ii) framing the contents of the right in a way suitable to the domestic needs and demands of the own national states.

A variety of working definitions of Traditional Knowledge stand for diverse facets of the of Traditional Knowledge, which are closely related yet dissimilar in nature, and are in some way keeping with the spirit of article 8(j) of CBD. But it is usually believed that article 8(j) is only a conception and not an exercisable right in itself. CBD leaves a lot of flexibility for parties to settle on how to put its directives into action within their own national context. Therefore, owing to its broad directive, defining Traditional Knowledge keeping in mind the article 8(j) of CBD will not help in deriving a functional regime for Traditional Knowledge in the respective national context. It would be more proper and suitable for the parties to define TK within their national and domestic spheres caring the spirit of CBD.

However, having looked upon the broad range of subject matters which it has to cover, a single-handed method of protection may not be prudent. Each type of Traditional Knowledge may demand a separate treatment, because, a variety of components of Traditional Knowledge's, like Traditional Knowledge related to innovations or traditional practices which are relevant from a commercial use, may require some form of protection like Traditional Knowledge while Traditional Knowledge and practices which are related to biodiversity conservation and management systems may insist upon a

different form of protection. The Traditional Knowledge related to farming, may need still a different approach of protection. The traditional medicinal knowledge, folklore and various forms of cultural expressions can be protected with a system beyond intellectual property protection. Different kinds of approaches may be taken into consideration for protection of Traditional Knowledge under intellectual rights. Traditional Knowledge may be protected by applying existing models of intellectual property rights, they can be protected under sui generis system or protection may be given under customary laws.

7.1.3 SUBMISSION ON CONFLICTING INTERESTS

The rights of indigenous and local communities over their Traditional Knowledge have been recognized in the CBD and the innovations and practices associated with biological and genetic resources have also been recognized under article 8(j) of the CBD. It is considered as a mile stone in this field. The continuing legal debates over the unsettled issues such as (i) from where this mandate ought to have assumed at national levels, (ii) how an efficient implementation and enforcement can be ensured at national as well as international levels and (iii) how it ought to be redesigned with the requirements of TRIPS agreement, etc. divulges the diverse levels of concerns involved in the protection Traditional Knowledge.⁷⁴⁴

The focal point of the trouble lies in the question how to restructure and determine the rigid, peculiar patenting system of the developed world with the developing, underdeveloped countries and community-held knowledge

744. Susette Biber-Klemm, "The Protection of Traditional Knowledge on the International Level— Reflections in Connection with World Trade," Paper submitted for UNCTAD Expert Meeting on Systems and National Experiences for Protecting Traditional Knowledge, Innovations and Practices, for the United Nations Conference on Trade and Development, Geneva, 30 October-1 November 2000.

therein. At the international level, there is a well-built lobbying from the North and West against any affirmative protection of Traditional Knowledge.

There has been a great interest in the conservation of biogenetic resources in the concerned countries. The source/owner-nations which have the bio-genetic resources and Traditional Knowledge share a general interest to frame laws at national levels for the use of Traditional Knowledge and the benefits sharing that accrue from the exploitation. These countries are encouraged by the sovereign rights recognition approved by the CBD.⁷⁴⁵ The source-nations' interest is again splitting between the varied conservation methods of biological diversity and Traditional Knowledge. There are differences of opinion on the subject of the terms and conditions that should to be there in the benefit sharing agreements to make sure the distribution of the profits with the holders and the consequent terms on transmission of technology.

At the local level, there are interests of the local and indigenous communities are also involved. They are entitled to be the part of such decisions related to them and their participation in rule making processes for access and benefit-sharing within national legal structure and to make sure that the use, exchange and benefit sharing aspects, value their customary laws and institutions.

The scientific investigation in the biotechnology industry is mostly based upon appropriate and trustworthy access to biogenetic resources which is situated within the territories ancestrally owned by Traditional Knowledge holder or indigenous communities and allied information on Traditional Knowledge wholly possessed by them. It leads to conflict of interests. There is an additional uncertainty, which is the most contentious, at the international

745. Article 8(j) of CBD.

level. This is the clash and discrepancy existing between CBD and TRIPS. On the one hand, CBD confidently provides for the protection of Traditional Knowledge and on the other hand, TRIPS does not include Traditional Knowledge in the kinds of knowledge entitled for protection. The aims of CBD are formed upon the recognition of community rights but the objectives of TRIPS are based on private monopoly rights. This has turn out to be the central point of controversy. In fact, resolving this issue and removing the inconsistencies between TRIPS and CBD is the most important concern of the Traditional Knowledge rich countries. Therefore these countries are demanding for the review and amendment of TRIPS.

The central point is that CBD and TRIPS agreement are not co-existent. Despite the fact that the CBD recognizes States' sovereign rights over their biological resources, the TRIPS agreement allows contracting members to provide patents over biological resources. Currently, the TRIPS does not have any provision to prevent bio-piracy, in which an individual can obtain patent rights over Traditional Knowledge or genetic resource which falls in the domain of other country.. In particular, the TRIPS agreement also keeps no provision to ensure the CBD requirement of 'prior informed consent' of the owners of the Traditional Knowledge or biological resources used in the creation. TRIPS agreement does not recognize the sovereign ownership concept and has no provision allowing a contracting member's claims to put into effect its national regimes for fair and equitable sharing of benefits from the patenting of its own genetic resources in some other country. Thus, TRIPS as it stands today surely hinders the execution of the CBD.

The association between the TRIPS Agreement and the CBD has been addressed by the Secretariat of the WTO.⁷⁴⁶ This association and relationship and protection of Traditional Knowledge or indigenous knowledge, was determined by the Committee on Trade and Environment at the World Trade Organization. WTO General Council formally established the CTE in 1995 to examine the relationship between the provisions of the multilateral trading system and trade measures for environmental purposes. It also aimed at to discuss those pursuant to Multilateral Environmental Agreements (MEAs). The CTE measured the requirements of the TRIPS Agreement relevant to its work on the environment under item 8 of its agenda. Some concerned developing countries have demanded that the TRIPS agreement must be reviewed and revised in light of the CBD obligations on contracting parties under article 8(j) of the CBD.⁷⁴⁷ However, so far, no actual step has been taken to make sure the legal protection of Traditional Knowledge. Therefore, the TRIPS provisions should be synchronized with the requirements of CBD to protect the rights of indigenous and local communities over Traditional Knowledge and associated biogenetic resources.

The blueprint of unbeaten legal framework for the affirmative protection of Traditional Knowledge depends upon the extent to which the above discussed levels of interests are balanced with the requirements of R&D.

746. Environment and TRIPS (WT/CTE/W/8 and W/8/Corr.1); the CBD and TRIPS (WT/CTE/W/50); and the Relationship between the CBD and TRIPS with a Focus on Article 27.3(b) (WT/CTE/W/125).

747. "Protection of Biodiversity and Traditional Knowledge – the Indian Experience," Submission by India to the WTO, WT/CTE/W/156, Available at commerce.nic.in/wto_sub/Environ/sub_Environ-W198.htm (Accessed on 12-12-14).

7.1.4 SUBMISSION ON GAP BETWEEN TRIPS AND TRIPS PLUS

TRIPS agreement was the consequence of seven years' long and tough negotiations⁷⁴⁸ which is considered as the most effective international mechanism establishing for the recognized legal regime on intellectual property rights. As TRIPS agreement enumerates in detail the forms of intellectual property rights allowed for protection under the TRIPS, it opportunely keeps the Traditional Knowledge out from the listing of subject matters fit for IPR protection. This exclusion of Traditional Knowledge is there in the agreement even when it gave extended protection for micro organisms and micro biological processes.⁷⁴⁹

Though the plant varieties were considered for 'sui generis' protection but Traditional Knowledge was not even considered for a *sui generis* protection. TRIPS agreement has given obligatory protection to plant breeders'.⁷⁵⁰ To embrace plant varieties under the system of intellectual property, the TRIPS has lowered the standards and established provisions for weaker requirements. It replaced 'distinctiveness' for the necessities of utility and non-obviousness. Such attempt was never sought or made for Traditional Knowledge.⁷⁵¹

There was a huge demand and stress from the bio-diversity rich nations including India to put up Traditional Knowledge as a piece of agenda for discussions and debates on TRIPS negotiations.⁷⁵² Nevertheless, these countries were not victorious in incorporating their welfare in the TRIPS due to the varied and incompatible views of developed nations from the North.

748. From September 1986 to December 1993

749. Article 27.3(b) of the TRIPS agreement, 1994.

750. *Id.*

751. Jayashree Watal, "Intellectual Property Rights in the WTO and Developing Countries", Oxford University Press, New York, 2001, p. - 11

752. *Id.*

This exclusion was not a casual. The exclusion was prejudiced by and resulted from the brainy demand of bio industries of the North. Moreover, the laps of Traditional Knowledge occurred in TRIPS in 1994 instantly after two years of CBD which advocated protection for knowledge, innovations and practices of indigenous, traditional and local communities. Thus, TRIPS shaped an unprecedented emptiness in the international legal field with reference to the protection of Traditional Knowledge. Not only that it ignored Traditional Knowledge from the domain of IPR and *sui generis*, but this elimination weaken the CBD obligations and the advance attempts for protection of Traditional Knowledge also. Amazingly, the post TRIPS regime also sustained the same approach by giving scope for Traditional Knowledge in the ministerial conferences held later to the TRIPS agreement.

7.2 SUGGESTIONS

7.2.1 NEED TO TIGHTEN INTELLECTUAL PROPERTY RIGHTS LAWS

Mainly intellectual property regime protects innovation. By obtaining a intellectual property right, the innovator becomes illegible for getting monetary benefits for a limited period of time out of the exploitation of that innovation. Discoveries, even with a scientific covering, are not inventions. Thus, there is an urgent situation to make tighter the IPR laws on this basis. Intellectual property rights should not be granted, in any forms, without the guarantee of added innovations. Specifically, the giving of intellectual property rights on discoveries can only act to decrease innovations. Generally, IPRs are being obtained on traditional use of traditional resources, which is already known to many, as in the case of *neem* patent. These cases must not be understood as inventions but as simple discoveries. Giving intellectual property rights to discoveries will not only encourage additional discoveries

but also will adjoin to the cost of invention, contrary to the very object of IPR system. There should be apparent division in international patent law between those scientific inventions that improve the process of discovery and those that employ the information derived from discovery to invent.

Therefore, well-built efforts should be made to make sure that prospectors are not capable to use the monopoly given as a reward for invention to produce additional chances for monopoly rents through acts such as tied sales, input bundling, failure to disclose key information to patent authorities, etc. So, the TRIPS can be strengthened to make it convenient for developing nations to get recourse if uncompetitive practices are seen among international biotechnology industries. The international intellectual property regime should give tough competition policy disciplines on the private restraint of trade in those industries that create and dispense innovations resulting from bio genetic materials and Traditional Knowledge.

On the other side, if international conventions on intellectual property rights including TRIPS go on to extend intellectual property rights to technologies that simply improve discovery or the discoveries themselves, then they must extend intellectual property rights to Traditional Knowledge without mentioning whether a discovery has taken place as a consequence of experience based Traditional Knowledge or through the exercise of modern scientific methods. The component of 'innovation' is more or less same in both the situations. It can clearly be said that It would not be fair to award one with intellectual property rights whereas not including the other.

7.2.2 CAPACITY BUILDING OF TK HOLDERS THROUGH EMPOWERMENT

There is no dispute on the fact that the capacity to use science for the development of innovations is not distributed evenly among societies.

Traditional societies forming part of ‘have-nots’ typically have little scientific capacity and therefore, have no opportunity to participate or compete with the ‘haves’ in the process of innovation. Hence, there is a need to increase and enhance the scientific capacity of ‘have-nots’ who have resources and TK. Any protection for the benefit of the holders of TK should be both effective in practice, and should be tailored to the specific context and resource constraints of TK holding communities.⁷⁵³ It underscores the need for coordinated capacity-building amongst the TK holders. Until the capacity of traditional societies to undertake scientific innovation is increased considerably, they will not be able to share equally in the benefits associated with the knowledge economy. Hence through capacity building including transfer of technology and know-how, the indigenous local communities must be empowered.

7.2.3 SETTING UP OF GLOBAL BIOCOLLECTING SOCIETY

A further mechanism for the realization of Traditional Knowledge holders’ rights is setting up a Global Bio-collecting Society. It was originally proposed by Peter Drahos.⁷⁵⁴ This idea is similar to copyright societies and performing right societies.⁷⁵⁵ Such bio-collecting society will serve the following purposes:

- a) the society would link the nation and community biodiversity registers,
- b) license Traditional Knowledge to potential users,
- c) supervise use and commercialization of Traditional Knowledge,
- d) collect and distribute royalties, and
- e) resolve disputes.

753. WIPO/GRTKF/IC/7/6, Available at www.wipo.int (Accessed on 12-11-12).

754. Peter Drahos, *European Intellectual Property Review*, Vol. 22, 2000, p. 245.

755. Section 33 of the Indian Copyright Act, 1957. Chapter VII, sections 33 to 36A provide for the administration of rights owned by societies, payment of remuneration by societies, rights and liabilities of societies etc.

Establishment of such a society invites some potential threats and challenges including effectual monitoring of use and distribution of benefits when a number of communities or countries claim ownership over the same or similar kind of knowledge. In the same way bio-collecting societies can be established at national, state and local levels.

7.2.4 PROACTIVE ROLE OF WIPO

There must be a broad worldwide study on indigenous peoples' right over their Traditional Knowledge and indigenous knowledge with the objective to identify the nature and scope of TK, to identify potential practical and legal methods of promoting and shielding traditional and local communities' rights over biogenetic resources and related indigenous and to discover the possibility of accepting some forms of Traditional Knowledge within the frame of IPRs system. Seeing the strong inter-relation between IPRs and Traditional Knowledge and since many intellectual properties are based on Traditional Knowledge and associated biodiversity, the WIPO should take required steps for such a wide-ranging global study. In such studies there must be full and effectual participation of all traditional and local communities who are the holders of Traditional Knowledge.

A deep revision of multilateral trade rules is necessary if the injustice inflicted by biopiracy and misappropriation of Traditional Knowledge on local communities and their indigenous knowledge is to be ratified.

7.2.5 AMENDMENTS RECOMMENDED IN THE TRIPS

The TRIPS has thoroughly diluted the objectives of CBD. Intellectual property rights under TRIPS completely pay no attention to Traditional Knowledge and contributions made by traditional and indigenous communities. The efforts made by individual nations, as per the TRIPS

directive to review their national laws on intellectual property, in order to fetch them in line with their obligations under the TRIPS agreement, are giving rise to the biopiracy and misappropriation of Traditional Knowledge. The loophole in the TRIPS, now allow the patent system, which is made-up to reward inventiveness, ingenuity and originality, to systematically reward piracy. If the patent system fails to honestly apply criteria of novelty and inventiveness in giving patents on invention related to Traditional Knowledge, then the system is tarnished, and it desires to be rectified. For this TRIPS must be relooked into and reviewed.

Since, as part of the implementation of the CBD, all bio rich nations ought to establish national arrangements for accessing and exploiting biological resources and the Traditional Knowledge associated with them and for sharing benefits arising out of commercial dealings with those communities which have preserved and developed this knowledge, the TRIPS agreement must be revised without delay to provide for *sui generis* system of protection for Traditional Knowledge. The protection must be made binding and obligatory. Principles of 'prior informed consent' and 'fair and equitable benefit sharing' must be included in TRIPS. These would avoid biopiracy and misappropriation of Traditional Knowledge to a certain extent.

TRIPS must include provisions requiring the prior approval of nations of origin before patent applications relating to or based on a biological resource or Traditional Knowledge, are granted. This would allow the nations of origin either to stop such patent applications or to call for benefit sharing arrangements with the applicants.

TRIPS agreement, which does not recognize the knowledge and innovations of the Third World and developing countries and in some way permits IPRs based on Traditional Knowledge, needs immediate amendment.

Having considered, India's particular interest in the matter relating to biogenetic resources and related TK, the government should voice our anxiety at proper forums such as WTO, WIPO, etc. to put into operation the requirements of PIC, ABS and disclosure of origin. It must promote the international community to amend TRIPS for that reason.

7.2.6 NEED TO FORMULATE POSITIVE LEGAL MECHANISM AND DATABASE

Nearly all the nations lack a positive legal mechanism to regulate the access to resources and knowledge and to make sure the benefit sharing. Most often, due to nonexistence of national protective systems, contractual obligations are being entered into between knowledge holders and bio-prospectors. The knowledge holders with their pathetic negotiation ability in the end gain nothing or merely something in return.

With reference to the community knowledge, as the contracts are not being finished with the community as such or at times even without their proper knowledge, only parties to the contract receive benefits. In addition to this, the communities have inadequate negotiation capacity and knowledge in this regard.

High cost involved in the transactions and this is another deficiency of contractual approaches. Legally supported guiding principle for ABS can very well deal with these issues and resolve terms and conditions without causing detriment to either the parties.

Despite the fact that there are few voluntary guidelines and alternatives for equitable sharing of benefits and technology transfer, the reality remains that misappropriation of proprietary rights over genetic resources and Traditional Knowledge of the traditional local communities is taking place

continuously. Most often the rights of the local communities who preserve the Traditional Knowledge are being damaged while policy makers, the researchers and the international agencies like WTO, WIPO, and UNEP construe the definition very cleverly to push forth the commercial interests of industries.

Without a fair and equitable benefit sharing, the ending result would be patent biological theft, misappropriation of biodiversity and the Traditional Knowledge that comes along with it, disempowerment of traditional local community and undermining of local communities' ability to sustain their own biodiversity based living strategies.

Lately, vital efforts are being made all over the world along this line to protect Traditional Knowledge. India also must have a legal frame to regulate the contractual obligations in favour of the local and indigenous people.

Revealing of invention by use in foreign nations is not a prior art like U.S.⁷⁵⁶ However, the international IP regime, with no exemption, considers documented knowledge as knowledge in public domain and therefore as prior art. Since the documentation of Traditional Knowledge puts the knowledge in the public domain, there has to be a logical and comprehensive documentation of Traditional Knowledge. India has documented knowledge related to traditional medicine. In the same way, there must be attempts to document knowledge involving other kinds of traditional practices and innovations of traditional community. The information so composed must be digitized and made obtainable to all intellectual property registries for the purpose of examination. While investigating the IP applications, the examiners can refer

756. US Code: Title 35; § 102 which deals with conditions for patentability; novelty and loss of right to patent.

to this information as a procedure of prior art. This will bring to light the misappropriation of Traditional Knowledge, if any.

7.2.7 NEED FOR INTERNATIONAL AND REGIONAL COOPERATION

Protection of TK is not an issue which can be resolved by municipal laws or by regional agreements. It is an international issue, and it can be resolved only by international cooperation. CBD also requires international cooperation in the conservation of resources and mutually beneficial agreements on its utilization. There is a need for unanimity amongst the international community to refuse patent or any kind of IPR on TK based inventions. All countries must treat TK, in any form, existing elsewhere in the world as ‘prior art’ anticipating an invention.

Countries with a high degree of scientific capacity and enforceable intellectual property rights systems should also ensure that their domestic patent laws do not allow the granting of intellectual property rights to what are traditional discoveries that have been acquired through biopiracy. If societies that have a high degree of scientific capacity need cooperation from developing countries in protecting their intellectual property through TRIPS, then they need to ensure that their own patent institutions provide good models and not ones detrimental to the interests of developing countries.

Some patent systems such as American patent system require a special mentioning in this aspect. The United States has granted patent for hundreds of products based on Indian TK. This is in spite of the fact that the United States’ IPR system is globally being treated as strong and stringent. But, in reality, the U.S. system is inherently flawed in dealing with Traditional Knowledge. The U.S. patent law as existing today can only pirate TK. The main reason for this is the existing patent regime in U.S. which does not treat

as prior art the Traditional Knowledge of other countries. §102 of the U.S. Patent Law, which defines prior art, does not recognize technologies and methods in use in other countries as prior art. If knowledge is new for the U.S., it is novel for the purpose of patents, even if it is part of an ancient tradition of other countries.⁷⁵⁷ Thus, use in a foreign country does not constitute 'prior art' in U.S. patent law. The denial or non-recognition of 'prior art' elsewhere allows patents to be granted in U.S. for existing knowledge and use in other countries. This is the basis of long record of bio-piracy cases and patents of Indian TK based 'inventions' in the U. S. § 102 thus enables the U.S. to pirate knowledge freely from other countries, patent it, and then enforce this stolen knowledge as intellectual property.

757. US Code: Title 35; § 102 which deals with conditions for patentability; novelty and loss of right to patent reads as follows:

A person shall be entitled to a patent unless—

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent, or

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States, or

(c) he has abandoned the invention, or

(d) the invention was first patented or caused to be patented, or was the subject of an inventor's certificate, by the applicant or his legal representatives or assigns in a foreign country prior to the date of the application for patent in this country on an application for patent or inventor's certificate filed more than twelve months before the filing of the application in the United States, or

(e) the invention was described in

(1) an application for patent, published under section 122 (b), by another filed in the United States before the invention by the applicant for patent or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351

(f) he did not himself invent the subject matter sought to be patented, or

(g) (1) during the course of an interference conducted under section 135 or section 291, another inventor involved therein establishes, to the extent permitted in section 104, that before such person's invention thereof the invention was made by such other inventor and not abandoned, suppressed, or concealed, or (2) before such person's invention thereof, the invention was made in this country by another inventor who had not abandoned, suppressed, or concealed it. In determining priority of invention under this subsection, there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

Knowledge flows freely into the U.S. but is prevented from flowing freely out of the U.S.⁷⁵⁸ Thus, if bio-piracy from India has to be stopped, then the U.S. patent law must be amended, and §102 must be redrafted to recognize prior art of other countries.⁷⁵⁹ In the same line, all countries must devise defensive and protective legal mechanism to protect TK and biogenetic resources belonging to other countries. To protect TK in developing countries, as Gustavo Ghidini suggests, the first step is the development of an international cooperative approach, not confrontational approach.⁷⁶⁰

India shares a considerable part of its biodiversity and associated TK including forests, life forms, and a huge variety of plants with one or more adjoining countries of South and South Asia particularly Nepal, Bhutan, Burma, Bangladesh, Maldives, Sri Lanka. Any one of these countries could undermine the position of others by offering commonly held biogenetic resources on less stringent terms and conditions. The importance of regional cooperation in conservation has been recognized but regional agreements are still far from being adequate.⁷⁶¹ It is therefore critical that the South Asian Association for Regional Cooperation (SAARC) and other regional grouping reach agreement on minimum set of conditions under which bio resources and associated knowledge can be given to the prospectors of the North.

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- 758. Sarah Anderson, "Views from the South: The effects of globalization and the WTO on the Third World", excerpted from Dr. Vandana Shiva's "War against Nature and the People of the South", Available at <http://www.thirdworldtraveler.com/Globalization/War_Against_Nature_VFTS.html>, (Accessed on 12-12-2010).
 - 759. Vandana shiva, Need to Change Western IPR System, Available at http://static.worldformation.org/wsis/wio_wsis_web.pdf >, (Accessed on 10-10-12)
 - 760. Gustavo Ghidini, "Equitable Sharing of Benefits of Biodiversity- based Innovation: Some Reflections Under a Neem Tree", in S. K. Verma & Raman Mittal (ed.), "Intellectual Property Rights A Global Vision", Indian Law Institute, New Delhi, 2004, p. 29 & 35.
 - 761. Surender Singh Chauhan, Biodiversity, Biopiracy and Biopolitics: The Global Perspectives, Kalunga publications, Delhi, 2001.

7.2.8 SIGNIFICANT ROLE OF NGOS

The NGOs along with the government must work together to create awareness amongst the indigenous and local community regarding the importance of knowledge they possess and the need and ways to protect it. There is a need for awareness-raising to ensure the practical effectiveness of any protection. There must be community empowerment to stop bio-piracy and misappropriation of Traditional Knowledge. They must promote a better understanding amongst the indigenous and local community about the value, use and potentials of the Traditional Knowledge that they own. The CBD stresses the important role of non-governmental sectors in promoting the conservation of biological diversity and sustainable use of its various components.⁷⁶²

7.2.9 NEED TO FORMULATE INTERNATIONAL TREATIES ON TK

There is a high need to formulate a long term strategy to protect bioresources and associated TK. Many countries including US have refused to rectify CBD. Bio rich nations should jointly put pressure on those countries yet to join the Convention to fall in line with CBD. The CBD must be given enforceability.

International treaties are extremely essential for the protection of Traditional Knowledge as they set standards, regulations and guidelines with reference to intellectual property, human rights, access and benefit sharing, conservation and management of biological resources, related trade etc. All these are interlinked and have impact on Traditional Knowledge protection.

762. Convention on Biological Diversity, 1992, Preamble

India should mobilize the biodiversity owning countries of the world to develop an international treaty dealing with the use of biogenetic resources and TK. The treaty must have enforceability as in the case of TRIPS. India should take the lead in building consensus among biodiversity rich countries on a uniform policy for bioresources and associated TK's use.

7.2.10 NEED TO DEVELOP A *SUI GENERIS* SYSTEM

As stated elsewhere, the need to promote and preserve Traditional Knowledge was, for the first time, highlighted internationally in 1992 with the conclusion of the Convention on Biological Diversity. However, the ray of hope brought about by the CBD did not last long due to the non-inclusion of TK in the legally binding TRIPS agreement. Consequent upon the severe criticism on the non-inclusion of TK in TRIPS, the WTO Ministerial Conference at Doha in 2001, mandated review of relationship between the TRIPS Agreement and CBD with reference to the protection of Traditional Knowledge. TK has a bearing on debates in several international forums. There were few attempts, as discussed in previous chapters, at global and national levels in designing appropriate intellectual property rights for indigenous and Traditional Knowledge. Nevertheless, no international system has yet been designed and implemented that effectively preserves TK, protects the rights of TK holders, and compensates them equitably for its use. Until now, these exercises have thrown up more unresolved questions than satisfactory answers.

The arguments surrounding the extension of intellectual property rights to TK are complex. Given the criteria for current intellectual property regime, TK is out of its purview. It fails to meet many of the requisites required for various kinds of IPRs.

In this background, there is a need to design successful legal instruments at both national and international level for the positive protection of Traditional Knowledge. As reflected in Article 8(j) of the CBD, there is the overall global long-term interest in conserving genetic resources and related knowledge with respect to both use and conservation techniques. At the national level, there are the interests of the source nations - nations who host such resources - who have the authority, as per Article 8(j), to enact laws governing the use of Traditional Knowledge and the sharing of benefits that accrue from such use. Source nations' interests are split between the conservation of biological diversity and the short term benefits that they may accrue through the exchange of information and natural resources. The source nations demand assurance that the benefits resulting from the use of genetic resources and Traditional Knowledge are, in fact, shared with the holders of these resources.

Having regard to the intricacies involved in its protection, the primary requirement for a successful legislative instrument is to break up the mandate of Article 8(j) into successful compartments, and legislate *vis-à-vis* each of them, according to the kind of knowledge in question. This is essential for a number of reasons.

Firstly, such a clear conceptualization is, under Article 15 of the CBD, necessary for resolving the inter-linkages between the right to Traditional Knowledge and the rights-over access regulation. To make it clear, TRIPS under Article 27.3(b) envisages a *sui generis* protection for plant varieties. Following its mandate India legislated Plant Variety Protection and Farmers Rights Act, 2000. On the same line, there can be new specific legislations on distinct kinds of Traditional Knowledge and for traditional practices, *viz.*

Protection of Traditional Medicines and Practices, Right of Traditional Medicinal Practitioners Act, etc.

Secondly, the property right that can be used to protect various kind of Traditional Knowledge may vary according to the subject matter of protection. For example, when a copyright-like *sui generis* system can effectively protect folklore, a patent-like *sui generis* system can be envisaged for traditional medicines. For the farming communities, a *sui generis* system akin to geographical indication may be more suitable. Hence, a legal framework having regarded to the subject matter of protection, must be designed.

Thirdly, why such a utility-based compartmentalization is extremely important is because the beneficiary categories change from area to area. Thus, identifying the subject matter of the right will automatically pave the way for decisions on (i) identification of beneficiaries who will exercise the right, (ii) the link between the right and biodiversity conservation, and (iii) the kind of right that will best suit the demands of the knowledge category and the beneficiaries.

For the larger goals of empowering indigenous and local communities, broader right structures are required. But for the purpose of practically protecting their specific knowledge pools, more rights and implementation structures need to be designed, failing which broad and overlapping property rights structures could hinder meaningful contractual exchange. Even after litigating in foreign countries on a series of biopiracy cases involving TK,⁷⁶³ the government has neither formulated nor implemented any policy decisions. Therefore, there is an extreme emergency to legally recognize and protect TK.

763. Detailed discussion of important cases on bio-piracy and misappropriation of TK has been made in Chapter-2.

Since the entire global community is divided on the issue, there is no point in waiting for an international instrument having enforceability. Having regard to the plenty of the resources and associated TK India has, it is high time we envisaged a national level protection reaching at grass root level for the local indigenous community.

Hence, it is recommended to enact a *sui generis* legislation for the protection of TK in India. *Sui generis* systems can be developed to define the rights of the communities over their knowledge. *Sui generis* is a Latin phrase which literally means ‘of its own kind’. A *sui generis* system is a system specifically designed to address the needs and concerns of a particular issue. A *sui generis* system for the protection of Traditional Knowledge would mean a system entirely separate from and different from the contemporary intellectual property regime. A *sui generis* system can be treated as a new form of intellectual property or intellectual property like rights. There are several examples of *sui generis* rights in the field of intellectual property rights law, such as plant breeders’ rights as reflected in the International Convention on the Protection of New Varieties of Plants, 1991 and the intellectual property protection of integrated circuits as reflected in the Washington Treaty on Intellectual Property in Respect of Integrated Circuits, 1989. Some examples of countries that are developing *sui generis* systems have already been discussed in the last chapter. These systems enable the government and the communities holding Traditional Knowledge to regulate access to and use of biological resources and the associated Traditional Knowledge.

However, the protection of TK under a *sui generis* IP regime raises a number of policy issues:

- a) About the role of communities and the functions of communally held knowledge in traditions that are part of heritage and culture as well as living traditions of habitat preservation and human interactions. TK is an integral part of the indigenous/local communities, closely linked to the land and habitat where they reside, their culture, their socio-political and economic systems and institutions. The natural environment has provided sustenance and healing, given an abiding spiritual basis for cultural and artistic expressions and helps in the communities' conservation and growth. The real issue in this context seems to be the protection of the communities as such and preservation of their lifestyles and cultures rather than the protection of TK as a separate and independent subject matter.
- b) About the structuring of economic incentives for the protection of TK and rights and obligations that are anchored in responses and behavior rather than in resources. For many, their TK holds a sacred value which they would not part with for money. They want to safeguard their knowledge from plunder. Holders of TK should be rewarded for their care and feeding of ideas. They need to be further encouraged for continuous preservation of TK. For that, there needs to be community empowerment and capacity-building.
- c) About the objectives to be reached by TK protection and the measures necessary towards that end. In this context, the issues that need to be examined are: what is to be protected and from whom is it to be protected; for what purpose; for whose benefit and in what form; will a protection be confined to TK in the public domain or will it cover knowledge held as secrets; and the sacred/ religious aspects of TK.
- d) About the scope of protection. As the TK protected under a *sui generis* regime would have an economic/ pecuniary thrust which would aim at protecting it against unauthorized use rather than promoting and preserving

its further use and diffusion, the following issues need to be addressed: when and how the right will accrue; the nature of entitlements and share in benefits; scope of protection, duration of protection or whether it be protected indefinitely and the rights conferred; and the monitoring/ administration/ enforcement of the TK related rights.

- e) About the nature of the regime. Whether it is to be legally binding instrument or a voluntary code.
- f) About the suitability of uniform law targeting at a totally diverse stakeholders whether or not a uniform system for the recognition and protection of Traditional Knowledge of the local and indigenous community will meet the expectations of this diverse group, for whom diversity is the lifeblood.

These issues need to be considered carefully and addressed astutely in the international context. Given the dynamic nature of TK, it can be protected by a holistic approach of protection at the national level and a restricted agenda at the international level with a legally enforceable regime.

India should choose a *sui generis* system, by way of a central legislation, as in the case of Plant Variety Protection Act to protect the biogenetic resources and TK. The New Act must endorse the role and value of Traditional Knowledge as well as the rights of indigenous people and of local communities who are the holders of his knowledge. Such a system could enable the country to protect the bio resources in a way that also protects the knowledge and innovations of local communities.

This new piece of legislation must translate the existing policy objectives into a binding legal instrument. It should provide for a system that will recognize and protect the rights of an individual as well as communities in regard to TK and IK and, at the same time, ensure fair and equitable benefit-

sharing with communities from those who are using that knowledge and reaping benefits thereby.

7.2.11 SPECIAL CONSTITUTIONAL AND LEGAL RECOGNITION TO TRADITIONAL KNOWLEDGE

When our constitution was enacted there was no such felt need to incorporate special provisions relating to Traditional Knowledge but giving protection to the vulnerable and weaker sections is not a concept alien to our Constitution. Indian constitution makes special provisions for the protection rights of Minorities,⁷⁶⁴ for socially and economically backward classes of the society⁷⁶⁵ and for the persons belonging to tribal area.⁷⁶⁶ The aim of this special protection is their protection and empowerment to make them stand to the forefront of the society. However, there is no special protection for the Traditional Knowledge holders, indigenous and local communities in relation to their unique and special TK and associated bio resources which they protect, preserve, conserve and sustainably use over centuries.

The issues of Traditional Knowledge and the rights of the indigenous communities over their biological resources are not directly addressed in the Constitution of India which is the basic law of the land. However Article 29, recognizes the right to protect the cultures of the minorities as a fundamental right but it fails to recognize their right over indigenous and Traditional Knowledge.⁷⁶⁷ Though it is likely to protect the cultures of the different groups in India based on this provision but it is not possible to guard the indigenous and Traditional Knowledge.

764. Constitution of India, Article 30

765. *Id.*, Article 15(4)

766. Article 371 read with Sixth Schedule of the Constitution.

767. Article 29- Any section of the citizens residing in the territory of India or any part thereof having distinct language, script or culture of its own shall have the right to conserve the same.

To value and save the legacy of our composite culture is a fundamental duty of everyone under Article 51(f). However, we have not made any legislation so far based on this provision for converting this constitutional objective into reality. Thus we are failing to guard not only the Traditional Knowledge but their culture and heritage too.

Our Constitution, taking into consideration the special cultural identity of the tribal population in India, keeps provision for special protection of the indigenous communities, but not for their knowledge. Since they are spread all over India, some living unconnectedly and others along with other sections of the society, the Constitution adopts diverse approaches to protect their cultural identities. The locations or areas where there are tribal communities, according to Article 371 read with Sixth Schedule of the Constitution, the tribal communities are allowed to have distinct autonomous council for self governance but it should be in accordance with their customary laws. The ordinary laws of the land are made applicable only if it acknowledged and acceptable to the community. Moreover, power has been given to the council to make laws even to protect their number of customs. For other regions of the country, the government has the power to create scheduled areas to protect the interest of the tribal community, as per Fifth schedule of the Constitution.⁷⁶⁸

Notwithstanding, the constitutional provisions giving protection and preservation of different groups, there are no particular laws preventing the exploitations of rights of these communities. There exist many customary standards in these communities restricting the use of Traditional Knowledge by outsiders and use of some knowledge is even confined only to customary

768. The tribal people not falling in the above categories are subjected to the normal laws of the land.

practices. Since there are no penal laws restricting the use of these resources by outsiders, gradually more they are being used for commercial gains.

In the lack of any law to look after the Traditional Knowledge and practices of the indigenous communities, there is no compulsion from a wholly legal perspective to provide incentive or compensation to the communities accountable for the preservation, development and maintenance of such Traditional Knowledge. This can be better gained by providing special protection in the Constitution itself to the indigenous and local communities for their knowledge. The indigenous communities' right over their indigenous and Traditional Knowledge should be recognized as a constitutional right and they must be provided due place in the Constitution. Therefore, there is a necessity to amend the Constitution to include provisions for the protection and preservation of traditional, indigenous and local communities' knowledge and their biogenetic resources. It should be included in the Part III of the Constitution dealing with fundamental rights as in the case of cultural rights of the minorities. Thus, An amendment is preferred in the Constitution to provide special legal and constitutional standing to Traditional Knowledge holders.

7.2.12 AMENDMENTS RECOMMENDED IN THE BIOLOGICAL DIVERSITY ACT, 2002

The Biological Diversity Act, 2002 requires some crucial amendments to convert the legislation as a legal tool to protect TK and associated resources.

Now, the interpretation of the concept of PIC is more about taking the consent of governments than of local communities. In the scheme of the Biodiversity Act, 2002, which is enacted in furtherance of CBD, powers regarding access to bio-resources for obtaining IPRs vest largely with the

National Biodiversity Authority (NBA) and the State Biodiversity Boards (SBB). Hence, in India if a pharmaceutical company wants to make commercial use of a plant and its traditional uses, it needs to get the PIC of the government, but not necessarily of the communities concerned. This provision must be amended as to mean the consent officially given through government but only after having the full consultation with the concerned indigenous communities and knowledge holders and after having obtained their PIC.

Community representation of the indigenous community in state and national biodiversity boards is weak in the present Act. There is no provision for the participation and decision-making of local communities. It is largely left to the national authority to take the views of communities into consideration. The local committee only responds when consulted, and in any case consulting does not necessarily include obtaining PIC of the local community.

The Indian government and the international community must interpret PIC to mean not simply the consent of the national government or any department of the bureaucracy but participation and involvement in decision making and obtaining prior informed consent of the concerned indigenous community. The local committees' participation is limited to documenting local knowledge in biodiversity registers. It does not even have the right to protect these registers from misuse or theft.

Both CBD and The Biological Diversity Act, 2002 speak about equitable benefit sharing. However there has been no attempt to define the term so far. It remains more as an idle concept than as a working principle. There must be some guidelines and regulations, at national and international level, to explain the concept and for its proper interpretation and implementation. Mechanisms of benefit sharing must be on terms mutually

agreed between the concerned community and the outsider who desires access, and the benefits must flow directly to communities. The Biodiversity Act, 2002 gives discretionary powers to the National Biodiversity Authority established under section 8 in matters of paying monetary benefits to the resource and knowledge providers. The National Biodiversity Authority can even direct the amount to be deposited in the National Biodiversity Fund.⁷⁶⁹

It is not mandatory that the benefits must be shared directly to the community. The Act, on these accounts, does not ensure transparency and accountability.

The Biodiversity Act, 2002 totally ignores the rules, customs and practices existing amongst the indigenous and local communities. Since biodiversity and TK are more associated with indigenous and local communities, their customary laws must be given due importance than on arbitrarily imposing state made laws on them. The Act has to be modified taking into consideration these aspects.

In the scheme of the Act, the National Biodiversity Authority is empowered to grant approval to foreigners and non resident Indians to access biological resources and Traditional Knowledge.⁷⁷⁰ NBA is also empowered to grant approval for applications for intellectual property rights on innovations based on biological resources and knowledge.⁷⁷¹ NBA, under section 21, has power to determine and ensure benefit sharing with the benefit claimers.

However, the indigenous and local communities have no effective representation in the NBA though the NBA is the sole authority to decide on

769. Section 21 (3) of Biodiversity Act, 2002.

770. Section 4 of Biodiversity Act, 2002

771. Section 6 of Biodiversity Act, 2002

the management, appropriation, use, conversion etc. of the resources and knowledge associated with the indigenous and local community.⁷⁷² It is an utter flaw of the Act. Their actual and effective participation must be ensured. The Act needs amendment to this effect.

State Biodiversity Board established under section 22 of the Act is the concerned authority to grant approvals for commercial utilization, bio-survey and bio-utilization of biological resources by Indians. More surprisingly, in SBBs, there is no representation of indigenous and local community who are the custodians of resources and TK and who are the benefit claimers.⁷⁷³ This is another major drawback of the Act. The Act needs an amendment to make provisions for the representation of indigenous local communities in SBBs.

Biodiversity Management Committees are the grass root management mechanism in the Act. But, the BMCs have no power and no role in any decision making process. The power to take all major decisions concerning the research and commercial utilization of the resources and knowledge by foreigners,⁷⁷⁴ approval to foreigners for IPR application,⁷⁷⁵ determination of equitable benefit sharing,⁷⁷⁶ granting approvals for Indians for commercial utilization etc. of resources⁷⁷⁷ are vested with the National Biodiversity Authority and State Biodiversity Authority. The local level management mechanism might have also been given powers relating to these aspects.

Section 41(2) simply states that National Biodiversity Authority and State Biodiversity Authorities shall consult the concerned Biodiversity Management Committee while taking decisions relating to the use of

772. Section 8 (4) of Biodiversity Act, 2002

773. Section 22(4) of Biodiversity Act, 2002

774. Section 3 of Biodiversity Act, 2002

775. Section 6 of Biodiversity Act, 2002

776. Section 21 of Biodiversity Act, 2002

777. Section 23 of Biodiversity Act, 2002

biological resources and knowledge associated with the resources. What is needed is a mere consultation. The advice of the Biodiversity Management Committees is not binding on the National Biodiversity Authority and State Biodiversity Authorities. There must be provisions in the Act to ensure that the National Biodiversity Authority's and State Biodiversity Authorities' decisions are not detrimental to the long term interest and benefits of the local indigenous community but rather highly beneficial to them. The Act must incorporate provisions to ensure that NBA and SBSs are taking decisions as per the genuine interest and requirement of the local indigenous community.

7.3 SUMMING UP

The system of intellectual property rights, by principle, exists to encourage innovations and discourage embezzlement of knowledge. TRIPS agreement has established that knowledge is goods which can be traded. If so, there is no logic in distinguishing and discriminating between the 'knowledge eligible for intellectual property protection in the formal system' and 'Traditional Knowledge in the informal system'. There is no justification for the totally different treatment, existing under the TRIPS IPR regime, for innovations using modern technology and Traditional Knowledge. Both should be given same legal status and recognition.

The preservation and protection of Traditional Knowledge is not only a key component of the basic right to self identification and a condition for the continuous existence of indigenous and traditional peoples; it is also a central element of the cultural heritage of humanity.

Hence, the rights of the indigenous local communities who preserve and conserve the bio genetic resources and associated Traditional Knowledge require immediate legal recognition and protection. There should not be any hesitation or delay to bestow property rights on the holders of Traditional

Knowledge. The concept of ‘community/collective right over Traditional Knowledge’ must be developed urgently in the global IPR regime. The property rights of local and indigenous people who hold TK must be recognized and given effective protection both in national legislation and in international legal instruments. The national and international legal instruments in this field must be developed as soon as possible.

TRIPS have failed to provide for the positive protection of Traditional Knowledge, innovations and practices. Many countries are misappropriating TK using this lacuna existing in TRIPS. Hence, a revision is needed of IPR laws as reflected in TRIPS. Article 27.3(b) of the TRIPS agreement needs to be reviewed to provide for *sui generis* protection of Traditional Knowledge, innovations and practices, as in the case of plant varieties. If TRIPS will remain unchanged, the developed countries will continue to import TK and other unprotected resources from our country which in turn, to our detriment, will be converted into intellectual property.

At the global level, Traditional Knowledge is still a relatively novel concern in international law. At present there is no binding and effective international law that safeguards and protects Traditional Knowledge and rights of the TK holders. Moreover, the TRIPS agreement does not mention Traditional Knowledge and there is no special treatment even by way of *sui generis* protection for Traditional Knowledge under TRIPS. The TRIPS has thus diluted the CBD objectives. The CBD mandate which stresses the importance of and the need to promote, international, regional and global cooperation amongst national states, intergovernmental organizations and non-governmental sectors for the conservation of biological diversity and sustainable use of its components, must be transformed into reality by devising appropriate legal and policy measures at international, regional and

national levels. For this, Traditional Knowledge must be recognized by the global community as a scientific knowledge system developed, nurtured and preserved by the indigenous, local and rural people, traditional healers, artisan communities etc., which is inseparably linked with their economic life, social culture and very existence.

Bio-piracy must be condemned and forsaken by the international community as illegal and unethical appropriation of bio-resources owned by the indigenous and local communities which would perturb the continuous improvement, evolution and development of TK and which in turn would lead to the complete erosion of Traditional Knowledge systems existing in different parts of the globe. Hence, as submitted by India at WIPO,⁷⁷⁸ there is a need to provide appropriate legal and institutional means for recognizing the rights of tribal communities on their TK based on biological resources at the international level. There is also a need to institute mechanisms for sharing of benefits arising out of the commercial exploitation of biological resources using such TK. This can be done by harmonizing the different approaches of the Convention on Biological Diversity on the one hand, and the TRIPS agreement on the other, as the former recognizes sovereign rights of States over their biological resources and the latter treats intellectual property as a private right.

Piracy of indigenous knowledge will continue until global patent law regime directly address this issue, exclude patents on indigenous knowledge and trivial modifications of it, and create *sui generis* systems for the protection of collective and cumulative innovations of indigenous and local communities. The protection of diverse knowledge system of traditional

778. Protection of Biodiversity and Traditional Knowledge – The Indian Experience, submission by India at Committee on Trade and Environment Council for Trade-Related Aspects of Intellectual Property Rights, WT/CTE/W/156, IP/C/W/198, 14 July 2000, p. 2

practices and innovations requires a diversity of IPR systems, or combination of IPRs including systems that do not reduce knowledge and innovation to private property for monopolistic profits. Systems of common property in knowledge need to be evolved as in the case of geographical indication⁷⁷⁹ for preserving the integrity of indigenous knowledge systems on the basis of which everyday survival of indigenous community is based.

TRIPS must devise an international intellectual property regime that maximizes the potential for both Traditional Knowledge and modern scientific innovation to contribute to economic progress. To achieve this effect, the TRIPS must be reviewed and amended with following aims:

- a) To establish the concept of community property right with respect to Traditional Knowledge
- b) To recognize communities' rights over their resources and TK
- c) To recognize, safeguard and protect the Traditional Knowledge, innovations, practices and technologies of indigenous and local people and communities
- d) To mandate legal protection for TK
- e) To recognize the sovereign rights of states over their biodiversity and genetic resources, and
- f) To mandate the principles of prior informed consent and benefit sharing when other countries access the biogenetic resources and associated TK of indigenous and local communities.

Such an amendment will remove the inherent tension between CBD and TRIPS. It also will resolve the conflict between private rights of IPRs holders

779. Section 11 read with section 24 of the Indian Geographical Indications of Goods (Registration and Protection) Ac, 1999

and community rights of Traditional Knowledge holders. It will ensure that the provisions of the CBD take precedence over TRIPS agreement.

Having considered its richness in Traditional Knowledge and associated resources, India should lose no time in starting the movement for amendment of TRIPS. An international mechanism is urgently needed to stop free import of knowledge from India. Being the champion for developing countries at international fora, India must coordinate amongst other green rich and bio rich nations blessed with TK and voice their concern in all appropriate forums like, WTO, WIPO, UN etc.

Now, coming to the national scenario, past experiences reiterate that our traditional, indigenous and local knowledge and associated resources are being used to make patented commodities for global trade. India could, certainly revoke certain patents based on our precious TK. But, how long and how many times should Indian government indulge in this legal battle? Having a law in place to protect TK would have made it difficult for foreign countries to patent products based on our Traditional Knowledge associated with plants like *neem*, turmeric, *karela*, *brinjal* etc. so unique to India. Issues like *neem* patents and *turmeric* patents should not reoccur.

Biopiracy threatens the everyday survival of ordinary Indians who belong to indigenous and local community and who hold valuable TK. If biopiracy is not stopped, our unique TK will be continuously threatened, misappropriated and patented by foreigners. Failure to enact appropriate legislation for the protection and conservation of TK is costing the country dearly.

What is common community knowledge cannot be allowed to be a subject of patent in the garb of IPR. It is the urgent need of the hour to rejuvenate the traditional systems of community management in order to counter the idea of biopirating, privatizing and converting the community knowledge into IPR.

Care must be taken to ensure that IPR systems do not reduce valuable and highly potential Traditional Knowledge and innovations into private property for monopolistic profits of others.

India should undertake a more proactive legal policy to secure, safeguard and protect its TK and enforce the rights of TK holders in the new world order. An effective protection would serve as a mechanism to prevent third parties from unduly appropriating Traditional Knowledge. However, it requires the documentation of all categories of Traditional Knowledge, innovations and practice, identification of beneficiaries and devising of an appropriate legal tool for implementation. An effective protection for TK would address all matters affecting the availability, acquisition, scope, maintenance, and enforcement of rights and interests related to TK, as well as those matters affecting the use, exercise and administration of rights and interests in TK.

The crucial importance of indigenous, traditional and local communities in preserving and nurturing biodiversity, biogenetic resources and associated Traditional Knowledge must be legally recognized by establishing the concept of community right. The legal recognition of community rights over biogenetic resources and associated Traditional Knowledge is fundamental to the protection of TK. The Indian government must develop suitable strategies including legal mechanism and policy decisions for safeguarding and enforcing the community rights of indigenous local communities over their Traditional Knowledge and associated biogenetic resources.

The government must also develop appropriate policy measures to implement the recommendations of National Knowledge Commission (NKC). NKC has made several recommendations on strategies to promote the knowledge systems of traditional medicine which include transformation of

traditional medicine education by introducing evidence based approaches, strengthening research on traditional health systems, strengthening pharmacopoeial standards, promoting traditional medicine by increasing quality and quantity of clinical trials and certification process, by digitizing Traditional Knowledge and by creating suitable framework of intellectual property rights, by establishing goals for conservation of natural resources, by promoting international cooperation, by supporting primary healthcare in rural areas creating a major re-branding exercise of Indian traditional medicine.⁷⁸⁰

The protection of Traditional Knowledge raises a number of issues such as the objectives and modalities of such protection and its impact. Such issues are extremely complex since there are broad differences about the definition of the subject matter, the contents of right, the rationale for protection, enforcing mechanisms, etc. The possible protection regime largely depends on how Traditional Knowledge is defined. The issues relating to Traditional Knowledge should be addressed in a holistic manner, including ethical, environmental and socio-economic concerns. Because, the social value of the basic Traditional Knowledge innovation is greater than the private market value of the knowledge as it is compounded by the value of the subsequent innovations also. The social value of Traditional Knowledge further includes any costs borne by the community due to its loss of Traditional Knowledge on commercialization. Similarly, it also includes any gains to the community that accrue from sharing of the profits from subsequent innovations developed.

There are, in addition, still many unresolved technical issues such as the problem of collective ownership and the modes of enforcement of rights.

780. David Downes, "Using Intellectual Property as a Tool to Protect Traditional Knowledge: Recommendations for Next Steps", Centre for International Environmental Law, Washington, DC, 1997.

One reason for lack of clarity about the rationale for protection stems from the different meanings given to the concept of protection. Some understand this concept in the context of IPRs, where protection essentially means to exclude the unauthorized use by third parties.⁷⁸¹ Others regard protection as a tool to preserve Traditional Knowledge from uses that may erode it or negatively affect the life or culture of the communities that have developed and applied it.⁶⁰⁴ Protection has a more positive role in supporting Traditional Knowledge-based communities' livelihoods and cultures, as proposed by the Organization of African Unity's (OAU's) Model Law and its definition of community rights.

The concern of Traditional Knowledge protection should not surpass the fact that the preservation and use of Traditional Knowledge require ensuring the continued existence and enhancement of living conditions and cultural milieu of such communities. local and Indigenous communities have to be given right to participation in rule making process. At the local level, the local and indigenous communities have interests to ensure that the use, exchange and benefit sharing aspects respect their customary laws and institutions. Indigenous communities need to be included and involved at every stage of such rule-making process involving the issue of access and benefit sharing.

Hence, there is an urgent need to design a *sui generis* legal mechanism in India⁷⁸² which can provide a fair deal to the Traditional Knowledge.

781. T Simpson, "Indigenous Heritage and Self Determination: The Cultural and Intellectual Property Rights of Indigenous Peoples", International Work Group for Indigenous Affairs, Copenhagen, 1997.

782. The draft of Model Law on the Protection of Traditional Knowledge and Community Rights is drafted in chapter 7 as a part of this research.

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