CHAPTER III

TRADITIONAL KNOWLEDGE:
FROM THEORY TO PRACTICE IN PROTECTION

Modern science can perhaps be dated to Newton’s times. But Traditional Knowledge\(^1\) (TK) Systems date from more than 2 million years, when Homo habilis\(^2\) started making his tools and interacting with nature. Since the dawn of history, different peoples have contributed to different branches of science and technology, often in a manner involving interactive contacts across cultures separated by large distances. This interactive influence is becoming clearer as the vast extent of global trade and cultural migration across large distances is being properly recognized by researchers\(^3\). TK is integral to the identity of most local communities. It is a key constituent of a community’s social and physical environment and, as such, its preservation is of paramount importance. Attempts to exploit TK for industrial or commercial benefit can lead to its misappropriation and can prejudice the interests of its rightful custodians. In the face of such risks, there is a need to develop ways and means to protect and nurture TK for sustainable development that are in line with the interests of TK holders\(^4\). The preservation, protection and promotion of the TK based innovations and practices of local communities are particularly important for developing countries. Their rich endowment of TK and biodiversity plays a critical role in their health care, food security, culture, religion, identity, environment, trade and development. Yet, this valuable asset is under threat in many parts of the world. There are concerns that this knowledge is being used and patented by third parties without the ‘Prior Informed Consent’ (PIC) of TK holders and that few, if any, of the derived benefits are shared with the communities in which this knowledge originated and exists. Such concerns have pushed TK to the forefront of the international agenda, triggering lively debate about ways to preserve, protect, further develop and sustainably use of TK.
1. Definitions and Scope of Traditional Knowledge

The term ‘TK’ expresses the ways and means by which individuals or communities identify and improve genetic resources over time, including processes related to their extraction from nature and their preparation for human usage. Also implicated by the term are methods and techniques for preserving the communities’ accumulated information about genetic resources for future generations.

Traditional Knowledge is clearly social, innovative, dynamic and often tacit in nature. It is often un-codified or codified in forms that may be culturally specific and difficult to access.

According to Martha Johnson, a Canadian Anthropologist, TK:

- is recorded and transmitted orally
- is learned through observation and hands-on experience
- is based on the understanding that the elements of matter have a life force
- does not view human life as superior to other animate and inanimate elements but that all life-forms have kinship and are interdependent
- is holistic rather than reductionist
- is intuitive rather than analytical, and mainly qualitative rather than quantitative
- is based on data generated by resource users themselves rather than specialized groups of researchers
- is based on diachronic rather than synchronic data
is rooted in a social context that sees the world in terms of social and spiritual relations between all life-forms, and
derives its explanations of environmental phenomena from cumulative, collective and often spiritual experiences. Such explanations are checked, validated, and revised daily and seasonally through the annual cycle of activities.

What is ‘traditional’ about ‘TK’ is not its antiquity, but the way it is acquired and used. In other words the social process of learning and sharing knowledge, which is unique to each indigenous culture, lies at the very heart of its ‘traditionality’\(^8\). Much of this knowledge is actually quite new, but it has a social meaning and legal character, entirely unlike the knowledge, Indigenous Peoples acquire from settlers and industrialized societies\(^9\). The term ‘TK’ most commonly refers to knowledge associated with the environment rather than knowledge related to. For example, artworks, handicrafts and other cultural works and expressions (which are usually assimilated to folklore)\(^10\). In other words a body of knowledge built by a group of people through generations living in close contact with the nature\(^11\). 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. The term ‘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 particular people or territory, and, are constantly evolving in response to a changing environment. Categories of TK could include; agricultural knowledge, scientific knowledge, technical knowledge, ecological knowledge, medicinal knowledge, including related medicines and remedies, biodiversity-related knowledge and expressions of folklore.

In a WIPO\(^12\) report,\(^13\) ‘TK’ is basically defined as a subset of the broader concept of ‘heritage’. According to Chairperson of the United Nations Working Group on Indigenous Populations, ‘heritage’ itself may be defined as\(^14\);
“…everything that belongs to the distinct identity of a people and which is theirs to share, if they wish, with other peoples. It includes all of those things which contemporary international law regards as the creative production of human thought and craftsmanship, such as songs, music, dances, literature, artworks, scientific research and knowledge. It also includes inheritance from the past and from nature, such as human remains, the natural features of the landscape, and naturally occurring species of plants and animals with which a people has a long been connected”.

Traditional Knowledge also refers to, as the WIPO uses it,

“…the 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 or artistic fields”.

Indigenous Knowledge, on the other hand is understood by the WIPO to be the TK of Indigenous People. Taken this way,

“…Indigenous Knowledge is therefore part of the TK category, but TK is not necessarily indigenous”

The word ‘Traditional Knowledge’ and ‘Indigenous Knowledge’ are used synonymously to differentiate knowledge developed by a given community from the international knowledge system as generated through Universities, Government Research and Industry Sectors.
Traditional Knowledge or IK is also defined as the\textsuperscript{19};

“…unique traditional local knowledge existing within and developed around the specific conditions of women and men to a particular geographic area”

Traditional Knowledge is also used often to denote indigenous medicinal knowledge which is defined as\textsuperscript{20};

“…a coherent system linking social behavior, supernatural beings, human physiology, and botanical observations”.

In the above definition, ‘tradition-based’ refers to knowledge systems, creations, innovations and cultural expressions which has 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\textsuperscript{21}. Characteristically, TK is thus knowledge that is traditional only to the extent that its creation and use are 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.

It is worth mentioning the comment by Battiste and Henderson\textsuperscript{22} that is the Traditional Ecological Knowledge (TEK) of Indigenous People is scientific, in the sense that it is empirical, experimental, and systematic. It differs in two important respects from western science, however TEK is highly localized and it is social\textsuperscript{23}. Its focus is the web of relationships between human, animals, plants, natural forces, spirits, and land forms in particular locality, as opposed to the discovery of universal laws. IK also refers to as traditional or local knowledge refers to the large body of knowledge and skills that has been developed outside the formal educational system. IK is
embedded in culture and is unique to a given location or society. IK is an important part of the lives of the poor. It is the basis for decision-making of communities in food security, human and animal health, education and natural resource management.

In short, knowledge held and generated within ‘traditional’ societies can be new as well as old. People who point this out are likely to emphasise that TK has always been adaptive because adaptation is the key to survival in precarious environments. Consequently, while TK is handed down from one generation to another, this does not mean that what each generation inherits is what it passes on. TK develops incrementally with each generation adding to the stock of knowledge.

Despite the fact that TK has been the subject matter of multiple international fora, so far, no internationally agreed definition of this term has emerged from these discussions. Despite the lack of clear terminology, several particular characteristics can generally be attributed to this form of knowledge. TK is transmitted from one generation to the next, usually in oral form or by way of example, whereas written sources are scarce and often in local languages. As non-static knowledge, it is constantly being improved and adapted to the changing needs of its users. TK is mostly held in common by the community and not the property of individuals. And finally, since this knowledge is intended to support the livelihood of its holders, its creation is not profit-driven.

Traditional Knowledge is not simply information. It has an inherent normative and social component. The term ‘Traditional’ used in describing this knowledge does not imply that this knowledge is old or un-technical in nature but ‘tradition based’. It is ‘traditional’ because it is created in a manner that reflects the traditions of the communities, therefore not relating to the nature of the knowledge itself, but to the way in which that knowledge is created, preserved and disseminated. Over the course of history, Indigenous Peoples and their communities have developed lifestyles and cultures that are intricately linked to nature. The areas of high biodiversity in which they commonly live are deeply embedded in their productive activities and spiritual lives. Through this close relationship with nature, most Indigenous Peoples have developed, and
are still developing, a wealth of TK for managing their environment in a sustainable way. The symbiotic relationship between the tribals with their ancestral domain led to their distinct and sound understanding of their surroundings developing a knowledge system often referred to as ‘IK’ which has been transmitted over generations. This manifests in their culture, customs and beliefs with biodiversity facilitating the evolution of a complex ecological map of knowledge.

2. Traditional Knowledge and Indigenous Societies

The term ‘Traditional Knowledge’\(^{31}\) refers to knowledge, possessed by indigenous people, in one or more societies and in one or more forms, including, but not limited to, art, dance and music, medicines and folk remedies,\(^{32}\) folk culture, biodiversity,\(^{33}\) knowledge and protection of plant varieties, handicrafts, designs, literature.\(^{34}\) There are several definitions for ‘indigenous people,’ but it essentially refers to people existing under relatively disadvantageous conditions.\(^{35}\) Hence they are crippled economically and socially. Their cohesiveness as communities damaged or threatened, and the integrity of their cultures undermined. Typically, the following are characteristics of indigenous people.

- They live in small societies and may not have access to formal education. They are unaware of the worth of the knowledge they possess\(^{36}\). Such communities are often found in developing and underdeveloped countries where there is a concentration of ethnocentric societies.

- Most often, the knowledge in question will be known to the entire community and remains exclusively within it. However, within the society, the knowledge is in the public domain.

- Occasionally, knowledge of a special skill or art is limited to a few members of the community.
The knowledge and its components are normally required for a regular lifestyle within the society. It is passed down through generations while still retaining its original individuality.\(^{37}\)

Knowledge present in one form, such as art, music, or folklore, can be developed into other forms more understandable to the rest of the world. However, these informal innovations do not get formal recognition.

Indigenous people often believe that Intellectual Property law is neither a necessary, nor a desirable, means of encouraging innovation within their communities. As a consequence, they are sometimes easily willing to share this knowledge, which leads to its exploitation.\(^{38}\) This situation gives raise to concern because, although the original holders have not acquired any benefit, the exploiters have benefited from the knowledge.\(^{39}\)

### 3. Importance of Traditional Knowledge

Traditional and indigenous knowledge (TK) has been used for centuries by indigenous and local communities under local laws, customs and traditions\(^{40}\). It has been transmitted and evolved from generation to generation. TK has played, and still plays, an important role in vital areas such as food security, the development of agriculture and medical treatment\(^{41}\). However, Western societies have not, in general, recognized any significant value in TK nor any obligations associated to its use, and have passively consented to or accelerated its loss through the destruction of the communities, living environment and cultural values\(^{42}\). Recently, Western science has become more interested in TK and realized that TK may help to find useful solutions to current
problems, sometimes in combination with ‘modern’ scientific and technological knowledge. Despite the growing recognition of TK as a valuable source of knowledge, it has generally been regarded under Western Intellectual Property laws as information in the ‘public domain’, freely available for use by anybody. Moreover, in some cases, diverse forms of TK have been appropriated under Intellectual Property Rights by researchers and commercial enterprises.

4. Need for Protection of Traditional Knowledge

The protection of TK is important for communities in all countries, particularly perhaps in developing and least developed countries. On one level, Traditional Knowledge plays an important role in the economic and social organization of those countries, and placing value on such knowledge is a viable means of promoting a sense of national cohesion and identity. On another level, developing and least developed countries are engaged in implementing two international agreements;

- the Convention on Biological Diversity (CBD), and
- the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)

That may affect the manner in which knowledge associated with the use of genetic resources (whether ‘traditional’ or not) is protected and disseminated. As an outcome of the Uruguay Round negotiations, many developing and least developed countries have accepted the obligation under the TRIPS Agreement to establish high standards of Intellectual Property protection, as a means of promoting free trade. It may be argued that biodiversity, and the Traditional Knowledge associated with using it in a sustainable manner, are a comparative advantage of those countries that are biodiversity-rich, enabling them to participate more effectively in global markets and thus rise above current levels of poverty and deprivation. This is an example of how protection of Traditional Knowledge at the national and the international levels may be seen
as a potentially powerful tool for advancing the integration of least developed countries into the global economy.

5. The Public Domain Problem

A dilemma evident in much recent scholarship regarding TK is whether the protection of TK should be pursued within the rubric of Intellectual Property law. Under the IPR system, knowledge and creative ideas that are not ‘protected’ are in the public domain (i.e. accessible by the public). Generally, indigenous peoples have not used IPRs to protect their knowledge and so TK is often treated as if it is in the public domain regardless of Customary Law.

Another key problem is that the IPR system is based on the premise that the author or creator deserves recognition and compensation for his or her work because it is the product of his or her genius; but that all of society must eventually be able to benefit from that genius. Therefore, according to IPR theory, all knowledge and creative ideas must eventually enter the public domain. This is the part of the reasoning for the time period limitations associated copyright, patents and trademarks.

The precept that all IP is intended to eventually enter the public domain is a problem for indigenous peoples because Customary Law dictates that certain aspects of TK are not intended for external access in any form; including, sacred ceremonial masks, songs and dances, various forms of shamanic art, sacred stories, art objects with strong spiritual significance such as scrolls, petroglyphs, and decorated staffs, rattles, blankets, medicine bundles and clothing adornments, and various sacred symbols, designs, crests and motifs. The present reality is that TK is, or will be, in the public domain and that the IPR system overrides Customary Law.

6. Traditional Knowledge and Intellectual Property Right

The Intellectual Property Rights are private rights. As an incentive for innovation, they grant their holder the ability to exclude others from certain activities, such as using a product
or process, for a defined period of time. The control afforded by IP protection thus enables right holders to limit who can use the resource, and so claim the benefits of commercialization with little competition. The patent system contemplated by the TRIPS Agreement for example, allows the holder of a product patent to prevent third parties from making, using, offering for sale, selling or importing the product. Even though, Traditional Knowledge raises serious challenges for the current IPR system, which some argue is unable to respond to the concerns of the TK holders. The main problems with TK in the IPR system are:

- that expressions of TK often cannot qualify for protection because they are too old and are, therefore, supposedly in the public domain;
- that the ‘author’ of the material is often not identifiable and there is thus no ‘rights holder’ in the usual sense of the term; and,
- that TK is owned ‘collectively’ by Indigenous groups for cultural claims and not by individuals or corporations for economic claims.

7. Traditional Knowledge in International Fora

The issues relating to TK has been addressed in several international organisations. The protection of TK aims to prevent the unauthorized appropriation of TK. Some of these organizations are UNEP/CBD, WIPO, UNCTAD and WTO. World Intellectual Property Organisation and UNEP undertook joint case studies on the role of IPRs in sharing of benefits from the use of TK and associated biological resources. The FAO and the CBD Secretariat regularly cooperate on issues of common interest in agriculture. Of course, the role of these different organizations are significantly varies.
The Convention on Biological Diversity was adopted at the 1992 UN Conference on Environment and Development in Rio de Janeiro and has since evolved into a complex system of policy and legal approaches to the conservation and sustainable use of biodiversity as well as to access to genetic resources and the sharing of benefits arising out of their utilization.\textsuperscript{52} The implementation of article 8 (j) has been extensively examined under the CBD\textsuperscript{53}. In particular, the Fourth Conference of the Parties (COP) established in April 1998 an ad hoc Open-ended Inter-Sessional Working Group on Article 8(j) to, inter alia, develop a programme of work for the implementation of Article 8(j) and related provisions and to provide advice on the development of legal and other appropriate forms of protection for subject matter covered by Article 8(j)\textsuperscript{54}. In June 1999, the Inter-Sessional Meeting on the Operation of the Convention explored options for Access and Benefit Sharing mechanisms. In this context, the meeting explored the relationship between IPRs, the TRIPS Agreement and the CBD. The meeting recognized the need to ensure mutual supportiveness between the TRIPS Agreement and the CBD and recommended that COP-5 transmit its findings on Article 8 (j) to the WTO and WIPO\textsuperscript{55}. It also recommended to COP-5 to invite the WTO to acknowledge relevant provisions of the CBD and to take into account that the objectives of the TRIPS Agreement and the CBD are interrelated\textsuperscript{56}. A panel of experts on Access and Benefit Sharing was set up and held its first meeting in 1999 focusing on mutually agreed terms and contractual approaches to access to genetic resources, benefit-sharing options and mechanisms, access legislation, the concept of prior-informed consent, IPRs, regulatory and incentive measures, and related capacity building. The report of the Panel was adopted by COP- 5 in Nairobi, May 2000. Delegations generally supported extending the Panels’ mandate and proceeding with the development of international guidelines on access to and the sharing of benefits from genetic resources\textsuperscript{57}. IPRs and the relationship between the TRIPS Agreement and the CBD were discussed under Item 23 of the Provisional Agenda - Access to Genetic Resources – at COP-5 in Nairobi, 15-26 May 2000. The COP adopted a decision on access to genetic resources containing three sections:
Access and Benefit Sharing (ABS) arrangements;

The relationship between IPRs and the TRIPS Agreement; and,

Ex situ collections acquired prior to the CBD’s entry into force and not addressed by the FAO Commission on Genetic Resources for Food and Agriculture.

The COP invited Parties to the CBD and relevant organizations to submit information about the role of IPRs in the implementation of ABS arrangements by 31 December 2000. The decision also invites relevant international organizations to analyze the functioning of IP systems as they relate to access to genetic resources, including the possibility of requiring information on the origin of genetic resources as part of the application procedure for IPRs. The decision also invites the WTO to acknowledge relevant CBD provisions and to take into account the relationship between the CBD and the TRIPS Agreement.

7.02. World Intellectual Property Organisation (WIPO)

World Intellectual Property Organisation developed (jointly with UNESCO) Model Provisions for National Laws for the Protection of Expressions of Folklore against Illicit Exploitation and other Prejudicial Actions. In 1998, WIPO created a Global Intellectual Property Issues Division, which undertook several studies on TK and, in particular, organized fact finding missions in different parts of the world to identify the issues at stake and the concerns of TK holders. The WIPO Intergovernmental Committee on Intellectual Property and TK, Genetic Resources, and Folklore, was established in 2000 and met for the first time on 30 April - 2 May 2001. After a shaky start, when proceedings were delayed by a dispute over the selection of a chair, many delegations present at the WIPO Committee reported on the steps taken at the national level for the protection of TK. They were generally sympathetic with the idea of addressing the legal
protection of TK under IPRs. The USA, however, questioned the desirability of establishing international rules on genetic resources, TK and folklore\textsuperscript{63} while other delegations indicated the need for further analysis on the matter.

7.03. The International Treaty on Plant Genetic Resources for Food and Agriculture (FAO)

The protection of TK has also been raised in relation to the definition and implementation of the concept of Farmers’ Rights introduced during the revision of the International Undertaking on Plant Genetic Resources for Food and Agriculture, which began in 1994. Article 9.2 (a) of the final text, which was adopted as a new treaty by the FAO Conference in Rome in November 2001 requires measures for the protection of ‘TK’ but, in view of the scope and purpose of the Treaty, it only refers to knowledge ‘relevant to plant genetic resources for food and agriculture’\textsuperscript{64}. Article 9.2 is, thus, narrower in scope than Article 8(j) of the CBD, and would not apply, for instance, to knowledge relating to medicinal or industrial uses of plant genetic resources. Under this approach, the issue of protection of TK may be circumscribed to knowledge incorporated in farmers’ varieties and certain associated knowledge (eg; specific cultivation practices). The development of a Sui generis regime for the protection of farmers’ varieties becomes, in this context, one of the possible components of Farmers’ Rights.

7.04. The United Nations Conference on Trade and Development (UNCTAD)

UNCTAD held on 30 October-1 November 2000, an ‘Expert Meeting on Systems and National Experiences for Protecting TK, Innovations and Practices’\textsuperscript{65}. Over 250 people from 80 countries participated, including representatives of Governments, indigenous groups, NGOs, Inter-Governmental Organisations (IGOs), academia, private companies, and international agencies and 50 papers on country experiences were presented\textsuperscript{66}. The meeting’s outcome, which reflected the diversity of views of experts, was taken up in February 2001 by UNCTAD’s Commission on Trade in Goods and Services, and Commodities, which negotiated agreed recommendations to governments, to the international community, and to UNCTAD. Recommendations to governments
were to raise awareness about protection of TK, to support the innovation potential of local and Indigenous communities, to facilitate the documentation of TK and to promote the commercialization of TK-based products.

7.05. United Nations High Commissioner for Human Rights (UNHCHR)

The United Nations Working Group on Indigenous Populations has the mandate to develop international standards for the rights of Indigenous Peoples, including in relation to their knowledge and cultural integrity. Protection of TK has been dealt with, as a component of the broader right to practice and revitalize indigenous cultural traditions and customs. A report by the High Commissioner on Human Rights pointed out that there are tensions between IP protection and the protection of the knowledge of local and indigenous communities (such as those relating to the use of such knowledge by people outside the community without the knowledge holders’ consent and to the equitable compensation) that may ‘require amendments, adaptations and additions to IP systems’. The High Commissioner is preparing a further report on the implications of the TRIPS Agreement on the rights of Indigenous Peoples.

7.06. World Trade Organisation (WTO)

The Council of TRIPS is an important forum for the discussion of IPRs, biodiversity and the protection of TK, particularly in the context of the review of Article 27.3 (b). However, the CBD Secretariat has not yet been given permanent observer status to the Council of TRIPS. The number of admitted observers is very limited and NGOs are not allowed to participate. Various countries have made submissions about the review of article 27.3 (b), which in some cases includes suggestions on TK.

The relationship between the TRIPS Agreement and the CBD has been addressed by the Secretariat of the WTO. This relationship, including the protection of TK, was examined by the Committee on Trade and Environment (CTE) at the WTO. The CTE was formally established in
1995 by the WTO General Council to examine the relationship between the provisions of the multilateral trading system and trade measures for environmental purposes, including those pursuant to Multilateral Environmental Agreements (MEAs). The CTE considered the provisions of the TRIPS Agreement relevant to its work on the environment under Item 8 of its agenda. Some developing countries have argued that the TRIPS Agreement must be reviewed in light of the obligations on States under Article 8(j) of the CBD.

The African Group has been particularly active in relation to the review of article 27.3(b). It wants that provision to be harmonized with the CBD, the objective of which is ‘to protect the rights of Indigenous People and local farming communities and to protect and promote biological diversity’\textsuperscript{71}. The proposal of the African Group demanded that such harmonization also be made with the FAO International Undertaking on Plant Genetic Resources, which ‘seeks to protect and promote Farmers’ Rights and to conserve plant genetic resources’. The group argues that\textsuperscript{72};

“…by mandating or enabling the patenting of seeds, plants and genetic and biological materials, Article 27.3(b) is likely to lead to appropriation of the knowledge and resources of indigenous and local communities”.

India has noted that while the TRIPS Agreement obliges Members to provide product patents for micro-organisms and for non-biological and microbiological processes, and to provide for the protection of plant varieties\textsuperscript{73}, the CBD\textsuperscript{74};

“…categorically reaffirms that nation states have sovereign rights over their own biological resources, recognizes the desirability of sharing equitably the benefits arising from the use of these resources as well as TK, innovations and practices relevant to the conservation of biological diversity and its sustainable use, and acknowledges that special
provisions are required to meet the needs of developing countries”.

In order to reconcile any contradictions, India suggested that the innovators share with holders of TK the benefits arising from its exploitation, through material transfer agreements or transfer of information agreements.

In the view of the government of India, however\textsuperscript{75},

“…the modalities for protecting TK are still emerging and evolving. The nature of entitlements and share in benefits is also a gray area. Even at the international level, clarity has yet not emerged and countries are grappling to understand the issue”.

Brazil has noted the conceptual and operational difficulties in bringing TK under the TRIPS Agreement\textsuperscript{76}, while for Venezuela, binding international rules on the protection of TK should be developed in the framework of the Agreement. It has suggested\textsuperscript{77},

“…to establish on a mandatory basis within the TRIPS Agreement a system for the protection of Intellectual Property, with an ethical and economic content, applicable to the TK of local and Indigenous communities, together with recognition of the need to define the rights of collective holders”.

Developed countries have not contested the possibility of and the right of countries to protect TK. Thus, the USA has argued that there is no inconsistency between the CBD and the TRIPS Agreement, encouraged the development of data bases on TK\textsuperscript{78}, and pointed out that ‘national or local legislation or regulation’ could be adopted to establish the basis for ‘contractual
arrangements’ between suppliers and recipients of TK. The USA, however, does not favour any treatment of the protection of TK, at least in the framework of the TRIPS Agreement.

The European Union (EU) and its Member States, instead, ‘support the development of an international model for the legal protection of TK’. The EU expressed its hope that the issue is taken by the WIPO Committee in cooperation with the CBD, and that once a model is in place; attention can then be focused on how and to what extent the protection of TK can be included in the TRIPS Agreement.

Developing countries’ positions aim at some recognition and protection of TK, but considerable hesitation seems to exist about how to deal with the subject, the nature and scope of protection, and the extent to which the issue should be brought under the TRIPS Agreement. Some countries seem to be more concerned with avoiding the misappropriation of TK and with the implementation of the sharing of benefits principle (through the use of MTAs), than with the development of a IPRs regime for TK. Others seem to aim at preserving the room existing at the national level to legislate on the matter, while at least one country has so far proposed to develop mandatory provisions in the context of the TRIPS Agreement. Significant preparatory work will be necessary to envisage international negotiations on the matter. Since according to the WTO rules only Member States and accredited observers are allowed to participate in the WTO deliberations, local and indigenous communities may only influence them through their respective Governments. They have no voice to express their views directly in that forum.

8. Traditional Knowledge in India: Legislative Measures

Environmental law in India has developed rapidly over the last thirty years, influenced in part by international treaties and standards but driven largely by domestic pressures and concerns. The last ten years have, however, seen increasing international influence in this area. Part of the explanation for this increase lies in the number of treaties that India has ratified. Since the early 1990s, however, India has been significantly influenced by the neo-liberal consensus advocated by
the Bretton Woods institutions. This involves the discrediting of the state and state intervention, increasing pressures to open-up the economy, the emphasis on private property and entrepreneurship as the engines of progress and the liberalization of state institutions in order that India may better integrate with a globalized world economy. This neo-liberal consensus has played a significant role in opening-up state institutions, including the legislature, to international influence. The TRIPS agreement is a part of the multilateral trading regime integral to these changes and its significance is enhanced by reliance on the WTO dispute settlement mechanism to ensure implementation by all member states. The agreement has therefore played an important part in bringing about TRIPS-compliant legislation and more generally contributed to an increasing emphasis on the appropriation of resources and knowledge through property rights.

8.01. The Patent (Amendment) Act, 2005

Recently amended patent law of India contains provisions for mandatory disclosure of source and geographical origin of the biological material used in the invention while applying for patents in India. Provisions have also been incorporated to include non-disclosure or wrongful disclosure of the same as grounds for opposition and for revocation of the patents, if granted. To protect TK from being patented, provisions have also been incorporated in the law to include anticipation of invention by available local knowledge, including oral knowledge, as one of the grounds for opposition as also for revocation of patent. In order to further strengthen these provisions, a new provision has been added to exclude innovations which are basically TK or aggregation or duplication of known properties of traditionally known component or components from being patented. Further, the act not only retains the exception concerning product patents for food and drugs but also now specifies that it excludes biochemical, biotechnological and microbiological processes. Further, it makes the non-disclosure of the geographical origin of biological material used in the invention or the anticipation of the invention in local or IK a ground for opposing or revoking the patent.
8.02. The Biological Diversity Act, 2002

India is a party to the CBD, which came into force in December 1993. The recognition of the rights of local and indigenous communities over their knowledge, innovations and practices related to biological resources under Article 8(j) of the CBD, 1993 has been considered a watershed in International law. The CBD offers opportunities to India to realize the benefit of these resources. India has already enacted an Act to provide for protection of biological diversity, sustainable use of its components and equitable benefit sharing arising out of the use of the biological resources. It addresses the basic concerns of access to, collection and utilization of biological resources and knowledge by foreigners and sharing of benefits arising out of such access. The legislation also provides for a National Authority, which will grant approvals for access, subject to conditions, which ensure equitable sharing of benefits. The main intent of this legislation is to protect India’s biodiversity and associated knowledge against their use by individuals or organisation without sharing the benefits arising out of such use and also to check bio-piracy. The legislation provides for a federal management structure with the NBA at the apex and BMCs at local community level. The BMC and the NBA is required to consult BMC in decisions relating to the use of biological resources or related knowledge within their jurisdiction. The legislation also provides for promotion of conservation, sustainable use and documentation of biodiversity. Prior approval of NBA would be required for applying for any form of IPR within or outside India for an invention based on research or information on biological resource obtained from India. The act also provides other forms of benefits sharing which are progressive insofar as they prioritize non-financial benefits such as transfer of technology, which are more long-lasting than financial compensation. This Act is an attempt to put into operation the two provisions of the CBD, i.e., sovereign rights of the countries of origin over their biodiversity resources and acceptance of the need to share benefits flowing from commercial utilization of biodiversity resources with the holders of TK, even if it is in the public domain or held as a part of an oral tradition.
8.03. The Plant Varieties and Farmer’s Right Act, 2001

This Act was drafted in response to a specific provision requiring the introduction of plant variety protection, Article 27 (3) (b) of the TRIPS Agreement. Legislation for the PPVFRA, 2001 also acknowledge that the conservation, exploration, collection, characterization, evaluation of plant genetic resources for food and agriculture are essential to meet the goals of nation food and nutritional security as also for sustainable development of agriculture for the present and future generations. It also acknowledges that the plant genetic resources for food and agriculture are the raw material indispensable for crop genetic improvement.

The concept of effective benefit sharing arrangement between the provider and the recipient of the plant genetic resources forms an integral part of the Act. Under this Act, the amount of benefit sharing will be based on the extent and nature of the use of genetic material of the claimant in the development of the variety and also the commercial use and sale in the market of the variety. To make this meaningful, mandatory disclosure of the geographical location from where the genetic material has been taken and information relating to the contribution, if any, of the farming community involving such variety, has been made. The protection provided to a plant variety bred by a breeder can be cancelled if there is an omission or wrongful disclosure of such information.

8.04. The Geographical Indication of Goods (Registration And Protection) Act, 1999

The Geographical Indication of Goods (Registration and Protection) Act, 1999 passed by Parliament is another step taken by India. The Act primarily intends to protect the valuable geographical indications of our country. The protection under the Act is available only to the geographical indication registered under the Act and to the authorized users. The Act permits any association of persons or producers or any organization or authority established by law representing the interest of the producer of goods to register a geographical indication. Around 65 GI’s of Indian origin have already been registered with the GI Registry. These include GI like
Aranmula Kannadi\textsuperscript{95}, Darjeeling Tea\textsuperscript{96}, Pochampalli Ikat\textsuperscript{97}, Kancheepuram Silk\textsuperscript{98}, Basmati Rice\textsuperscript{99}, Balaramapuram Handlooms\textsuperscript{100}, Madhubani Paintings\textsuperscript{101} etc. It may be possible for the holders of the Traditional Knowledge in goods produced and sold using geographical indication can register and protect their Traditional Knowledge under this law.

9. Other Suggested Measures

Various suggestions have been advanced in India to extend protection to knowledge, innovations and practices. These include:

9.01. Documentation of Traditional Knowledge (TKDL)

Proper documentation of associated TK could help in checking bio-piracy. Documentation could be a double-edged sword. It is assumed that if the material or knowledge is documented, it can be made available to patent examiners the world over so that prior art in the case of inventions based on such materials or knowledge are readily available to them\textsuperscript{102}. It is also hoped that such documentation would facilitate tracing of indigenous communities with whom benefits of commercialization of such materials or knowledge has to be shared. Documentation has one clear benefit\textsuperscript{103}. It would check patent based on TK in the public domain that is today difficult to prevent due to lack of availability on information with patent examiners. Documentation of TK is also acknowledged as a means of giving due recognition to the TK holders. This particular aspect of documenting formulations in the Ayurvedic system of medicine in India in the shape of Traditional Knowledge Digital Library (TKDL) is already on. The scope of the TKDL work relates to the transcription of 35,000 formulations used in Ayurvedic system of medicines. These details are being converted into Patent Application Format and will include description, method on the preparation, claim and the usage of the bibliography\textsuperscript{104}. The retrieval will be based on the Traditional Knowledge Resource Classification (TKRC) and International Patent Classification (IPC). The original Sanskrit text is translated and presented in French, German, English, Japanese, Spanish and Hindi through unit code technology that is language independent. The total number of
The local names of plants are converted into botanical names and Ayurvedic descriptions of diseases into modern medical terminology. The TKDL will eventually cover other indigenous systems like Unani, Siddha, Naturopathy, folklore etc.

The documentation of such TK in a digitized format would, it is hoped, prevent patenting of knowledge which is already in the public domain. Work on such libraries is also being pursued in WIPO where a specialized Task Force including representatives from China, India, the United States Patent and Trademark Office (USPTO), and the EPO are examining how such TK libraries can be integrated into the existing search tools used by patent offices. Also in India, preparation of village-wise Community Biodiversity Registers (CBRs) for documenting all knowledge, innovations and practices has been undertaken in a few States.

9.02. Development of A Sui generis System

With all these efforts 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. However, the parameters, elements and modalities of a Sui generis system are still being worked out.

10. Conclusion

Thus, some of the best known forms of TK are expressed through songs, rituals, stories and the more recently bio-pirating, traditional medicinal knowledge. This body of knowledge is a part of the cultural and ethnic identity of the Indigenous Peoples. Western style industries have increasingly had recourse to TK. In most cases transnational corporations have exploited this knowledge base and resources of the Indigenous Peoples without adequate or appropriate consent and sometimes no consent at all. The health care industry with its overburdening reliance on innovation and patents depends on medicinal ecological knowledge to derive eco-friendly products with minimum side effects from plants and other natural genetic resources. So it is the need of the
hour to protect the TK including TRM, from being bio-pirated, through effective and stringent legal instruments.
Traditional Knowledge (TK), Indigenous Knowledge (IK), Traditional Environmental Knowledge (TEK) and Local Knowledge (LK) generally refer to the long standing traditions and practices of certain regional, indigenous, or local communities. Traditional Knowledge also encompasses the wisdom, knowledge, and teachings of these 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, and even laws. Other forms of Traditional Knowledge are expressed through different means. Acharya, Deepak and Shrivastava Anshu, Indigenous Herbal Medicines: Tribal Formulations and Traditional Herbal Practices Jaipur: Aavishkar Publishers Distributor (2008)

1 Homo habilis is a species of the genus Homo, which lived from approximately 2.3 to 1.4 million years ago at the beginning of the Pleistocene period. The discovery and description of this species is credited to both Mary and Louis Leakey, who found fossils in Tanzania, East Africa, between 1962 and 1964. Homo habilis was the earliest known species of the genus Homo. In its appearance and morphology, H. habilis is thus the least similar to modern humans of all species in the genus. H. habilis was short and had disproportionately long arms compared to modern humans, however, it had a less protruding face than the australopithecines from which it is thought to have descended. H. habilis had a cranial capacity slightly less than half of the size of modern humans. Despite the ape-like morphology of the bodies, H. habilis remains are often accompanied by primitive. B. Wood, “Who is the ‘Real’ Homo Hablis?” 327(No. 6119) Nature 187 (1987)


5 M. Johnson, “Research on Traditional Environmental Knowledge: Its development and its Role” in M. Johnson (Ed) in Lore: Capturing Traditional Environmental Knowledge Ottawa: IDRC (1992)

6 Ibid


14 Supra n. 5
One important and widely acknowledged aspect about TK is that it does not imply static nor necessarily old knowledge. Rather, TK is often dynamic and adaptive to changing cultural patterns and a wide range of external influences, including occupation of Indigenous People’s lands, market pressures over certain resources, re-settlement, etc. TK often flows in oral forms and is not codified in writing or in systematized forms (i.e. books or databases). For some a key feature is 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). See generally WIPO, “Intellectual Property Needs and Expectations of Traditional Knowledge Holders” WIPO Report on Fact Finding Missions on Intellectual Property and Traditional Knowledge (1998 -1999)

Id. at 23


Supra n. 6


The Secretariat of the CBD defines TK as referring “…to the knowledge, innovations and practices of Indigenous and local communities around the world. Developed from experiences gained over the centuries and adapted to the local culture and environment. TK 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. TK is mainly of a practical nature, particularly in such fields as agriculture, fisheries, health, horticulture, and forestry.” See www.biodiv.org/programmes/socio-eco/traditional/default.asp Accessed on 11 August (2010). According to WIPO, TK ‘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 people or its territory and are constantly evolving in response to a changing environment. Categories of TK 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 TK 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.” See WIPO-IGC, Paragraph 25 (2002)

Supra n. 11

Ibid

Elements of a *Sui generis* System for the Protection of TK, World Intellectual Property Organisation, Inter governmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, 3rd Sess. (2002). *See also* WIPO/GRTKF/IC/3/8

Ibid

Article 8(j) of the Convention of Biological Diversity defines this term as “knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity.” Convention on Biological Diversity, June 5, 1992, Art. 8, 31

Medicines and folk remedies have a direct bearing on the product patent regime that TRIPS stands for. Most of the countries that will be subject to the product patent regime are economies that cannot and will not be able to afford the high prices for the drugs. Where the folk medicines or knowledge about these plants are taken to be used in pharmaceutical research, it is argued that the people who first possessed this knowledge should benefit in some form.

The use of Traditional Knowledge is associated with sustainable use and biodiversity. *See* David Downes, *How Intellectual Property Could Be a Tool to Protect Traditional Knowledge*, 253, 254-57 (2000) (arguing that the protection of this knowledge should be through the available Intellectual Property regime).

All these forms have practical uses and commercial marketability. Such forms of Traditional Knowledge have been used as a starting point for many industrial inventions. *See Id.* at 254

Supra n. 26


*See* Ibid

Supra n. 10

Ibid


Supra n. 8


Supra n. 26


“Bio-piracy through IPRs has arisen as a result of the devaluation and invisibility of IK systems and the lack of existing protection of these systems. The protection of IK systems as systems of innovation and the prevention of piracy of biodiversity require a widening of legal regimes beyond the existing IPR regimes such as patent,” Vandana Shiva, Afsar Jafri, Gitanjali Bedi, and Radha Holla-Bhar, *The Enclosure and Recovery of the Commons* New Delhi: Research Foundation for Science, Technology and Ecology, (1997). ‘Bio-piracy’ has been defined as the process through which the rights of indigenous cultures to genetic resources and knowledge are erased and replaced for those who have exploited IK and biodiversity. In fact, a large number of patents have been granted on genetic resources and knowledge obtained from developing countries, without the consent of the possessors of the resources and knowledge. There has been extensive documentation of IPR being sought over resources ‘as they are’, without further improvement (eg, US Patent No. 5,304,718 on Quinoa granted to researchers of the Colorado State University; US Plant patent No. 5,751 on Ayahuasca, a sacred and medicinal plant of the Amazonia) and on products based on plant materials and knowledge developed and used by local or indigenous communities, such as the cases of the Neem Tree, Kava, Barbasco, Endod and Turmeric, among others (Pat Roy Mooney, “The Parts of Life Agricultural Biodiversity, IK, and the Role of the Third System” *Development Dialogue* (Special Issue) Uppsala (1998) 152-154). Many of these patents have been revoked by the competent national authorities. Thus, the Council of Scientific and Industrial Research (CSIR) from India asked for a re-examination of the US Patent No. 5,401,5041 granted for the wound healing properties of turmeric. The US Patent and Trademark Office (USPTO) revoked this patent after ascertaining that there was no novelty, the innovation having been used in India for centuries. In early 2000 the patent granted to WR Grace Company and US Department of Agriculture on neem (EPO Patent No. 436257) was also revoked by the European Patent Office on the grounds of its use having been known in India. A re-examination request for the patent on Basmati rice lines and grains (US Patent No. 5,663,484) granted by the USPTO was also made by the CSIR. See R.A. Mashelkar, “The Role of Intellectual Property in Building Capacity for Innovation for Development: A Developing World Perspective” New York: WIPO (2000). The US government has justified the problems posed by these patents as follows; “Informal systems of knowledge often depend upon face-to-face communication, thereby limiting access to the information to persons in direct contact with one another. The public at large does not benefit from the knowledge nor can the knowledge be built upon. In addition, if information is not written down, that information is completely inaccessible to patent examiners everywhere as prior art when they are examining patent applications. It is possible, therefore, for a patent to be issued claiming as an invention technology that is known to a particular indigenous community. The fault lies not with the patent system, however, but with the inaccessibility of the knowledge involved beyond the indigenous community. The US patent granted for a method of using turmeric to heal wounds, referred to during India’s intervention in June 1999 and again in October 1999, is an example of a patent issued because prior art references were not available to the examiners. In that instance, however; the patent system worked as it should. The patent claim was cancelled based on prior art presents by a party that requested re-examination” (US General Declaration to the First Meeting of the WIPO Committee, 1st May (2001)). In September 1997, a Texas company called Rice Tec won a patent (U.S. Patent No. 5,663,484) on ‘basmati rice lines and grains.’ The patent secures lines of basmati and basmati-like rice and ways of analyzing that rice. Rice Tec, owned by Prince Hans-Adam of Liechtenstein, faced international outrage over allegations of bio-piracy. It had also caused a brief diplomatic crisis between India and United States with India threatening to take the matter to WTO as a violation of TRIPS which could have resulted in a major embarrassment for the United States. Both voluntarily and due to review decisions by the United States Patent and Trademark Office, Rice Tec lost or withdrew most of the claims of the patent, including, most importantly, the right to call their rice lines...
The Issue: In late 1997, an American company Rice Tec Inc, was granted a patent by the US patent office to call the aromatic rice grown outside India ‘Basmati’. Rice Tec Inc, had been trying to enter the international Basmati market with brands like ‘Kasmati’ and ‘Texmati’ described as Basmati type rice with minimal success. However, with the Basmati patent rights, Rice Tec will now be able to not only call its aromatic rice Basmati within the US, but also label it Basmati for its exports. This has grave repercussions for India and Pakistan because not only will India lose out on the 45,000 tons US import market, which forms ten percent of the total Basmati exports, but also its position in crucial markets like the European Union, the United Kingdom, Middle East and West Asia. In addition, the patent on Basmati is believed to be a violation of the fundamental fact that the long grain aromatic rice grown only in Punjab, Haryana, and Uttar Pradesh is called Basmati.

Description: Basmati rice means the ‘queen of fragrance or the perfumed one’. This type of rice has been grown in the foothills of the Himalayas for thousands of years. Its perfumy, nut-like flavor and aroma can be attributed to the fact that the grain is aged to decrease its moisture content. Basmati, long grained rice with a fine texture is the costliest rice in the world and has been favored by emperors and praised by poets for hundreds of years. According to the Agricultural and Processed Food Products Export Development Authority (APEDA), India is the second largest producer of rice after China, and grows over a tenth of the world’s wheat. In 1993, Basmati rice attracted the highest premium because it is a very long grained rice, with an aroma of its own which enhances the flavours its mixed with. The Rice Patent: Rice Tec Inc. was issued the Patent number 5663484 on Basmati rice lines and grains on September 2, 1997. In abstract, “the invention relates to novel rice lines and to plants and grains of these lines. The invention also relates to a novel means for determining the cooking and starch properties of rice grains and its use in identifying desirable rice lines. Specifically, one aspect of the invention relates to novel rice lines whose plants are semi dwarf in stature, substantially photoperiod insensitive and high yielding, and produce rice grains having characteristics similar or superior to those of good quality Basmati rice. Another aspect of the invention relates to novel rice lines produced from novel rice lines. The invention provides a method for breeding these novel lines. A third aspect...relates to the finding that the Starch Index (SI) of a rice grain can predict the grain's cooking and starch properties, to a method based thereon for identifying grains that can be cooked to the firmness of traditional Basmati rice preparations, and to the use of this method in selecting desirable segregants in rice breeding programs”. Importance of Rice on Indian and Pakistan Economy: Rice is an important aspect of life in the Southeast and other parts of Asia. For centuries, it has been the cornerstone of their food and culture. During this period, farming communities throughout the region developed, nurtured, and conserved over a hundred thousand distinct varieties of rice to suit different tastes and needs. It is for this reason that patenting of Basmati by Rice Tec Inc. is perceived as not only Intellectual Property and cultural theft, but it also directly threatens farm communities in Southeast Asia. According to Dr. Vandana Shiva, director of a Delhi based research foundation which monitors issues involving patents and bio-piracy, the main aim for obtaining the patent by RiceTec Inc. is to fool the consumers in believing there is no difference between spurious Basmati and real Basmati. Moreover, she claims the “…theft involved in the Basmati patent is, therefore, threefold: a theft of collective intellectual and biodiversity heritage on Indian farmers, a theft from Indian traders and exporters whose markets are being stolen by Rice Tec Inc., and finally a deception of consumers since Rice Tec is using a stolen name Basmati for rice which are derived from Indian rice but not grown in India, and hence are not the same quality”. Available at http://www.rediff.com/business/1998/mar/12rice.htm Accessed on 12 September (2011). In fact, Basmati rice has been one of the fastest growing export items from India in recent years. In the year to March 1997, India exported more than half a million tons of Basmati to the Gulf, Saudi Arabia, Europe and the United States, a small part
of its total rice exports, but high in value. More substantively, Indian farmers export $250 million in Basmati every year and U.S. is a target market. Rice Tec Inc. had attempted to sell its long grain rice in Europe under such brand names as ‘Texmati’ and ‘Kasmari’ but not as Basmati. However, if the patent is not revoked, Rice Tec Inc., can now sell its rice under the brand name Basmati which will definitely cut into India’s and Pakistan’s global market share, especially as the rice grown in the US could be sold cheaper than the Indian and Pakistani varieties. The Government of India’s response to the Patent: The government of India reacted immediately after learning of the Basmati patent issued to Rice Tec Inc., stating that it would approach the US patent office and urge them to re-examine the patent to a United States firm to grow and sell rice under the Basmati brand name in order to protect India’s interests, particularly those of growers and exporters. Furthermore, a high level inter-ministerial group comprising of representatives of the ministries and departments of commerce, industry, external affairs, Council for scientific and industrial research (CSIR), Agriculture, Bio-technology, All India Rice Exporters Association (AIREA), APEDA, and Indian Council of Agricultural Research (ICAR) were mobilized to begin an in-depth examination of the case. The contents and implications of the patent are currently being analyzed in consultation with patent attorneys and agricultural scientists. The government of India is particularly concerned about the patenting of Basmati because of an earlier case where the US granted a patent to two Indian born scientists on the use of Turmeric as a wound healing agent. This case worked in favor of India because the patent was subsequently revoked after scientists of (CSIR) successfully challenged the patenting on the ground that the healing properties of Turmeric had been ‘common knowledge’ in India for centuries. There is a clause in US patent laws that will accept any information already available in published or written form anywhere in the world as ‘common knowledge’. As a result, India was able to furnish published evidence to support their case that the healing characteristics of Turmeric are not a new invention and as such cannot be patented. Legal Procedures of Obtaining a Patent in the US and India: The law firm representing India in the dispute, Sagar and Suri, criticized the procedures for granting patents in the US claiming it is diametrically opposite to the one followed in India and Europe. According to them, India first examines a patent application, then widely publishes it for third parties to challenge, and only then grants the patent. However, the US keeps the patent application a closely guarded secret and grants it without allowing other parties to challenge it. After the patent has been granted, third parties are then allowed to petition against the patent as India is currently doing in the Basmati case. This criticism clearly illustrates the shortfalls in the patent process in the US that ultimately needs to be revised to prevent future cases like this from occurring. See http://www1.american.edu/ted/basmati.htm Accessed on 8 August (2011)


55 Supra n. 10


57 A second meeting was held in March 2001. Available at http://www.biodiv.org Accessed on 16 September (2010)

Since 1998, WIPO has undertaken a programme that explores emerging Intellectual Property issues. The programme for 2000/2001 covered;

a) Protection of TK, innovations and creativity-including commissioning a study on Customary Law and regulatory systems that apply to the protection of informal knowledge, commissioning a feasibility study on the use of IP law or practice to protect informal knowledge, and organising an annual Round Table on the protection of TK for the holders of such knowledge.

b) Biotechnology and biodiversity - including an examination of the social, economic and ethical implications of IPRs in relation to the Human Genome Project and the Human Genome Diversity Project and commissioning a study on the IP aspects of access to and benefit sharing in biological resources.

c) Protection of folklore - including convening several expert meetings to examine alternatives for the development of standards for the protection of folklore at national, regional and international levels, a national pilot project on the documentation, conservation, sustainable use and beneficial commercialisation of folklore, and provision of advice on the development and implementation of national laws and systems relevant to the protection of folklore.

d) Intellectual Property and development - including a seminar on the role of IP in economic, social, cultural and technological development and the preparation and dissemination of a study on the role of IP in the transfer of environmentally-sustainable technology to developing countries with reference to obligations under multilateral arrangements including Article 66(2) of the TRIPS Agreement. See Simon Walker, *The TRIPS Agreement, Sustainable Development and the Public Interest* Discussion Paper IUCN (2000)


“All these facts lead to one question, is it possible, or even desirable, to establish a comprehensive, uniform set of rules at the international level to govern the use of genetic resources, TK and folklore? At the very least, we wonder whether it is advisable to undertake such activity before individual countries have, in conjunction with the communities within their borders, established their own regimes for protection within their own territories and have gained experience in the application of that protection and its effect on the communities involved. We believe that WIPO member States should consider these issues carefully in the framework of this Committee…It must be noted that the newer generation of Intellectual Property laws all share a certain characteristic with the older generation of Intellectual Property laws of copyright, patents, trademarks mainly that of an incentive mechanism for innovation. As forward looking systems that seek to encourage the development of new forms of expression and invention, the newer types of Intellectual Property still are based on this basic principle and share characteristics such as a date of creation, the known identity of one more creators, defined parameters of the relevant product and limited duration of protection. A regime to protect TK, as many of the participants in WIPO’s Fact Finding Missions pointed out, cannot by definition adhere to these principles. Thus, developing a new Intellectual Property-type regime in this area does not appear to be the best fit even for the holders of such knowledge. Moreover, there are so many different expectations, goals and native systems, for approaching ownership and the transgression of ownership that a useful, enforceable global system would be virtually impossible to create. Indeed a ‘one size fits all’ approach might be interpreted as demonstrating a lack of
respect for local customs and traditions. Questions have been raised as to the definitions of beneficiaries, economic valuation and other critical terms of reference. We also note with interest the variety of local rules and procedures that have developed within certain Indigenous communities. Clearly these local rules must be respected and care must be taken to avoid their pre-emption. All in all, as the United States has noted on various occasions, many of the goals of Indigenous and local communities in ‘protecting’ their TK, medicine, folklore, etc., stems from their concern for self-determination, health, justice, cultural heritage and land issues. These are serious interests that must be examined fully within the appropriate national contexts”. See General Declaration of the USA to the First Session of the WIPO Committee, 30 April -3 May (2001)

64 The International Treaty on Plant Genetic Resources for Food and Agriculture was approved by the Conference of the UN Food and Agriculture Organisation (FAO) on 3 November (2001). Article 9 states;

9.1 The Contracting Parties recognize the enormous contribution that the local and indigenous communities and farmers of all regions of the world, particularly those in the centres of origin and crop diversity, have made and will continue to make for the conservation and development of plant genetic resources which constitute the basis of food and agriculture production throughout the world.

9.2 The Contracting 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 Contracting Party should, as appropriate, and subject to its national legislation, take measures to protect and promote Farmers’ Rights, including:

(a) protection of TK 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; 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.

9.3 Nothing in this Article shall be interpreted to limit any rights that farmers have to save, use, exchange and sell farm-saved seed/propagating material, subject to national law and as appropriate.


70 See Environment and TRIPS (WT/CTE/W/8 and W/8/Corr.1) The CBD and TRIPS (WT/CTE/W/50) The Relationship Between the CBD and TRIPS with a Focus on Article 27.3(b) (WT/CTE/W/125)


72 See WT/GC/W/202
Aranmula is a rural place in Pathanamthitta District of the State of Kerala in India. This is a rural area and the place is known for a peculiar type of metal (combination of tin and copper) mirror called ‘Aranmula Kannadi’. The high quality of the mirror, which is made of metal, makes it different from ordinary mirror and is in great demand as a gift and as a keepsake item. Only a few traditional families are engaged in the production of this metal mirror. Their ancestral origin is from Sankarankoil near Tirunelveli in the State of Tamil Nadu. They belong to the category of Viswakarma bronze smith. Their ancestors were brought to Kerala from Tirunelveli approximately 500 years ago by the Maharaja of Travancore for the construction of temples. They were given landed properties for residence, cremation and other practical purposes by the Raja, and the present generation still possesses parts of the land given to their ancestors. The peculiarity of the Aranmula metal mirror is that it resembles a glass mirror in every respect, but the surface gives reflected images instead of the refraction that occurs in glass. In the manufacture of the mirror, the metals used are tin and copper in a specified combination, which is kept secret by the members of the family. For casting and moulding, they use clay from Aranmula itself and the proportion of the clay used in different parts of the mould is also a secret. The casted combination of tin and copper is brittle and silver-like in colour with rare brilliance. It acquires the quality of

74 See Ibid
76 See IP/C/W/228
77 See WT/GC/W/282
78 Switzerland has also agreed on the usefulness of documentation of Traditional Knowledge. See IP/C/W/209
79 See IP/C/W/257, 3.4.0
80 Supra n. 6
82 The WIPO Committee may provide a forum for such preparations.
84 Ibid
85 Ibid
86 Grulac, “Traditional Knowledge and the Need to Give it Adequate Intellectual Property Protection” Document submitted by the Group of Countries of Latin America and the Caribbean, WIPO, Geneva Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and folklore, First Session, Geneva (2001)
87 Section 5of the Patents Act, 1970 (As amended in 2005)
88 Supra n. 9
89 Preamble of the Biological Diversity Act, 2002
90 Section 7 of the Biological Diversity Act, 2002
91 Supra n. 47
92 Section 6 of the Biological Diversity Act, 2002
93 Section 18(4) of the Biological Diversity Act, 2002
94 Section 21 of the Biological Diversity Act, 2002
95 Aranmula is a rural place in Pathanamthitta District of the State of Kerala in India. This is a rural area and the place is known for a peculiar type of metal (combination of tin and copper) mirror called ‘Aranmula Kannadi’. The high quality of the mirror, which is made of metal, makes it different from ordinary mirror and is in great demand as a gift and as a keepsake item. Only a few traditional families are engaged in the production of this metal mirror. Their ancestral origin is from Sankarankoil near Tirunelveli in the State of Tamil Nadu. They belong to the category of Viswakarma bronze smith. Their ancestors were brought to Kerala from Tirunelveli approximately 500 years ago by the Maharaja of Travancore for the construction of temples. They were given landed properties for residence, cremation and other practical purposes by the Raja, and the present generation still possesses parts of the land given to their ancestors. The peculiarity of the Aranmula metal mirror is that it resembles a glass mirror in every respect, but the surface gives reflected images instead of the refraction that occurs in glass. In the manufacture of the mirror, the metals used are tin and copper in a specified combination, which is kept secret by the members of the family. For casting and moulding, they use clay from Aranmula itself and the proportion of the clay used in different parts of the mould is also a secret. The casted combination of tin and copper is brittle and silver-like in colour with rare brilliance. It acquires the quality of
its reflection on cleaning and polishing. The combination of tin and copper as well as the proportion of clay used in the different parts of the mould is a closely guarded secret and the same is transferred from father to son for generations. The local knowledge holders also claim that even if the secret of the combination is revealed, nobody could make the mirror with this perfection since a lot of knowhow, skill and experience is needed for the manufacture. This is the reason for the reputation of the product and the control of the business exclusively within specific family groups for a long time. It takes almost six months for the completion of the manufacture of one piece of mirror and each and every stage of production is done manually, without the use of machines. Although the material cost is very low, substantial time is required using skill and craftsmanship for the production and polishing of the mirror. The market price of a small mirror is more than Rs. 2000 ($ 50) and the price can go up to Rs. 25,000 ($ 600) depending upon the size of the mirror. Even though the producers make a reasonable profit they are of the view that it is inadequate to compensate the craftsmanship involved. Even today the mirror manufacturing is purely a family business. At present there are four families in Aranmula continuing with the production and all of them are relatives. There are around 50 members who are involved in the business and all of them belong to middle class families. The fact that they currently can make only reasonable profits shows that GIs could have a significant impact on the socio-economic conditions of actual producers provided they could prevent others from using it. Aranmula kannadi is now marketed nationally and internationally. Due to the exorbitant price of the product, only the elite class could afford it. It is interesting to note that the families manufacturing the mirror directly market the mirrors. They have recently created a web site for promoting the sale of the product. They are also associated with government cooperative societies in Kerala such as ‘Surabhi’ and ‘Kairali’ for sale of their product. The Development Commission of the Handicrafts and Handloom Department has issued identity cards and artisans’ credit cards to them. Even though they are making reasonable profits from their business, they are not sure whether their younger generations will continue with this business considering the changing life patterns of Kerala. Their aim is to educate their children to enable them to get good jobs. See Gopalakrishnan, N.S, Prabha S. Nair and Aravind K. Babu Exploring the Relationship between GIs and TK: An Analysis of the Legal Tools for the Protection of GIs in Asia Geneva: ICTSD Programme on IPR and Sustainable Development, International Centre for Trade and Sustainable Development (2007)

Darjeeling tea is the world’s most expensive and exotically flavoured tea. Naturally occurring quality and flavor has made it unique among teas. Darjeeling among teas may be equated to champagne among wines. It is a major export product of India and it was the first GIs application filed in India under the Indian GIs Act. According to the Tea Board of India, Darjeeling tea means tea which has been cultivated, grown, produced, manufactured and processed in tea gardens in the hilly areas of Sadar Sub-Division. This includes the hilly areas of Kalimpong Sub-Division comprising of Samabeong Tea Estate, Ambiok Tea Estate, Mission Hill Tea Estate and Kumai Tea Estate and Kurseong Sub-Division of the District of Darjeeling in the State of West Bengal, India. The tea which has been processed and manufactured in a factory located in the aforesaid area and which, when brewed, has a distinctive, naturally occurring aroma and taste with light tea liquor and the infused leaf of which has a distinctive fragrance is recognized as ‘Darjeeling Tea’. Darjeeling is situated in West Bengal in the foothills of the Himalaya at elevations of between 2,000 and 3,000 meters above sea level. The distinctive, exclusive and rare character of Darjeeling tea is the result of several factors. The elevation from 610 to 2134 meters on steep slopes provides ideal natural drainage for the generous rainfall coupled with intermittent cloud and sunshine. These natural factors impart the unique character of Darjeeling tea. The beginning of tea plantations in Darjeeling started during the first half of the 1800s. The first experimental trial of tea plantation began in 1841 with the seeds obtained from China being quite successful. Tea bushes cultivated in Darjeeling are mostly of Chinese origin, which take four to six years to mature. Plucking season is March - November. The average yield is 500 kgs/hectare of dry tea and is less than a third of the yields of tea gardens in areas of cultivated plains. The yield of a single bush
amounts to 100 grams of the total tea produced during a year. It grows in a temperature variation of 8° and 35°Celsius.

The highest yield is obtained in June and the lowest during October with low temperature as a major climatic factor limiting the yield. Darjeeling Tea is still manufactured using old traditional industrial methods known as ‘Orthodox Production’. This helps the tea to maintain the inherent aroma. The leaves undergo uniform stages during processing with focus primarily on quality. The various stages involved are withering, rolling, fermentation, firing/drying, sorting and grading. Now, there are around 87 tea gardens producing Darjeeling Tea and they function in the Darjeeling Hills on a total area of 19,000 hectares. The industry employs about 52,000 people permanently and another 15,000 people on a temporary basis during the plucking season. About 60 per cent of the workforce consists of women and the majority of work involves planting, tending, plucking and package of the produce. The workers are given monetary compensation as well as amenities like food, accommodation, subsidized cereal ration, free medical benefits and infrastructure for schools, amongst other things. A major proportion of the Darjeeling Tea produced is exported to countries like Germany, Japan, UK, USA and EU countries such as the Netherlands and France. *Ibid*

Pochampally is a small rural village in Nalgonda District of the State of Andhra Pradesh in India, known for its very unique ‘IKat’ design for handloom silk and other cloth materials. The weavers in Pochampally are basically Hindus of the Padmasali community and they have been marketing their products using the name ‘Pochampally Handloom’ for a long time. The ‘Pochampally Handloom Weavers Co-operative Society Ltd’, an autonomous society registered under the Societies Act, and ‘Pochampally Handloom Tie and Dye Silk Saris Manufacturers Association’ now regulates various weaving activity in Pochampally. The Pochampally design started during the period of Nizam when the ‘IKat’ technique was brought from Chirala, a place in Andhra Pradesh. The weaving originally started with cotton material to produce ‘Rumal’ for the rural people, particularly for the Muslim community, who used it as a turban. It became very famous and came to be known as ‘Asian Telia Rumals’. The ‘Rumals’ were exported in large quantity to Burma, the Middle East and some African countries. In 1960, the Chairperson of the All India Handicrafts Board Smt. Kamaladevi Chatopadhyay visited Pochampally and persuaded the weavers to weave the first cotton saree using the traditional technique. The success of this attempt resulted in the weaving and marketing of sarees using the name ‘Pochampally Handloom’. Later, the Board sent two weavers to Banaras to study silk weaving and this facilitated the production of silk sarees. The weaving of Pochampally design cloth has now spread over the entire Nalgoda district, Medak, Mahabooba Nagar, Ranga Reddy and Warrangal. More than a million people are engaged in this business and are now producing handloom silk sarees, cotton bed sheets, curtain cloths and all other cloth materials. The material used for manufacturing the sarees and other items are collected from different parts of the country. Silk is procured from Bangalore, in the State of Karnataka and Surat in the State of Gujarat, the cotton from the State of Andhra Pradesh and chemical for colouring from Mumbai in the State of Maharashtra. The producers also use vegetable colours prepared from local plants and flowers. The Agricultural Training Institute, in Nalgonda, is conducting research in this area to improve the quality of preparing colours. The attraction of Pochampally sarees is their colour combination and design. The weavers achieve this through their traditional technique of ‘Tying and Dyeing’. It involves the sequence of tying and dyeing sections of bundled yarn to a pre-determined colour scheme prior to weaving. The weavers first prepare the design over a graph paper and decide the colour pattern before dyeing the yarn. After this, the threads are stretched on warping blocks and are divided into a number of sets. They mark the design over the threads and tie or cover it with a rubber tape in the areas where the original colour is to be retained. The exposed portion of the yarn is dyed while the tied section remains undyed. After it becomes dry it is again stretched for dye in the other part of the yarn. This process is repeated several times till the designing is completed. Historically, this traditional technique of ‘Tying and Dyeing’ was very secret and used only by the male members of the family. They did not even allow their wives to see it. Now it
is open for several reasons, mainly because they themselves allowed foreigners to take photographs and explained the production methods to them. The Society is now training the new generation of weavers to learn this technique. See Ibid

Kancheepuram is a temple city in the State of Tamilnadu in South India, well known for silk sarees by name ‘Kancheepuram Silk’. History of the craftsmanship and silk producing tradition in Kancheepuram is very old and it can be traced back to more than four hundred years. This city was the capital of Pallava kings which was later ruled by Cholas, Vijayanagar rulers, Muhammadan kings and the British. All these regimes contributed their share in preserving the tradition of Kancheepuram weaving. Kancheepuram silk sarees are hand woven with dyed silk yarn and inter-leaved designs made with ‘Zari’. The consumers prefer this saree because it is woven from pure mulberry silk made up of three single threads twisted together and it has an enviable reputation for texture, luster, durability and finishing. Originally, weaving in Kancheepuram was a pure community-based business by the ‘Salia’ community. But now almost all the communities within the radius of 8 kilometers from Kancheepuram city are engaged in weaving. There are 21 registered co-operative societies in this field having total membership of more than 30,000 weavers and about one million weavers who are not members of any society. According to the official report 75 % of the population in Kancheepuram District is directly or indirectly connected with saree industry. It is this industry that sustains the socio-economic conditions of Kancheepuram. Manufacturing of Kancheepuram saree is associated with several factors. It is a combination of conventional and traditional technique of weaving with craftsmanship. These sarees are made of natural silk and Gold ‘Zari’. The quality of Zari is an important variable in deciding the quality of sarees. This city does not manufacture silk or Zari. Silk is sourced from Dharmapuri in the same State and Bangalore, in the nearby Karnataka State and Zari is procured only from Surat of Gujarat State. The weavers claim that water used at Kancheepuram for processing the raw silks give the luster to silk fabrics and this may be one of the reasons for setting up the silk industry here. Above all, the traditional weaving technique used in Kancheepuram is unique and very important for the reputation of the saree. All weavers in Kancheepuram openly use this traditional technique. The price of the sarees varies depending upon the nature of the Zari work. Thus the market price of the Kancheepuram sarees ranges between Rs. 2000 ($ 50) to Rs. 50,000 ($ 1150). Kancheepuram saree is exported to Sri Lanka, Singapore, Hong Kong, England, Africa, Aden, Gulf, U.S.A., U.K., Germany Italy and Russia. See Ibid

‘Basmati’ is a variety of long grain rice grown in India and Pakistan, notable for its fragrance and delicate, nuanced flavour. Its name means ‘the fragrant one’ in Sanskrit, but it can also mean ‘the soft rice’, and the word coincidently means ‘my smile’ in Arabic. India is the largest cultivator and exporter of this rice, followed by Pakistan, it is primarily grown through paddy field farming in the Punjab region. The grains of basmati rice are longer than most other types of rice. Cooked grains of Basmati rice are characteristically free flowing rather than sticky, as with most long-grain rice. Cooked basmati rice can be uniquely identified by its fragrance. Basmati rice is available in two varieties, white and brown. Basmati rice has a typical pandan-like (Pandanus fascicularis leaf) flavour caused by the aroma compound 2-acetyl-1-pyrroline. Basmati Rice is the choice of rice used for cooking Biryani, Pilaf and sometimes Kheer. A number of varieties of basmati rice exist. Traditional types include Basmati-370, Basmati-385 and Basmati-Ranbir Singh Pura (R.S. Pura), while hybrid basmati varieties include Pusa Basmati (also called ‘Todal’, because the flower has awns). Fragrant rices that are derived from basmati stock but are not considered true basmati varieties include PB2 (also called sugandh-2), PB3 and RH-10. Scientists at Indian Agricultural Research Institute, Delhi took the traditional basmati and genetically modified it to produce a hybrid which had most of the good features of traditional basmati (grain elongation, fragrance, alkali content) and the plant was a semi-dwarf type. This basmati was called Pusa Basmati-1. PB1 crop yield is higher than the traditional varieties (up to twice as much). Approved varieties of basmati are Punjab, Kernel Basmati (Pakistan), Dehradun, Safidon, Haryana, Super basmati, Kasturi (Baran, Rajasthan), Basmati 198, basmati 217, basmati 370, basmati 385, basmati 386, Bihar, Kasturi, Mahi Suganda, Pusa, Ranbir, Taraori. Some non-traditional aromatic

100 Balaramapuram, a rural area in the Thiruvananthapuram District of State of Kerala in India, is known for cotton handlooms. The cloths made from this place are sold in the market using the name ‘Balaramapuram Handlooms’. The history of handloom weaving here is connected with the former Travancore royal family. Handloom in Balaramapuram started during the period of king Balaramavarma 250 years ago. The King brought five weaving families from Valliyoor, Tirunalveli District of Tamilnadu, a nearby State. They belonged to the Chalia community and were brought to weave and supply cloths to the members of royal families. The King allotted four streets to them and gave financial assistance initially to start the business. The handloom sector in Balaramapuram today provided jobs for about a thousand families consisting of around a million members, belonging to different communities like Ezhava, Nadar, Mukkuva, and others. All these communities are treated as educationally, socially and economically backward communities by the State for special educational and other benefits. There are more than thirty handloom co-operative societies in Balaramapuram though the majority of them are not functioning properly. It is interesting to note that the majority of the traditional weavers from Chalia community are not members of these societies. There are a number of families who are not members of the society but are involved in weaving. This makes it clear that the weaving activity and the economic benefit deriving from the production and sale of cotton clothes in Balaramapuram based on the traditional reputation is no longer confined to the members of the traditional Chalia community. This means that the reputation of the name acquired by the Chalia community is now enjoyed by a large number of people belonging to weaker sections (economic, education and lower cast) of society. The major items manufactured from Balaramapuram are ‘Pudava’ and ‘Kavani’, ‘Sarees’, ‘Veshti’, ‘Bed sheets’ etc. The materials used for their weaving are cotton and ‘Kasavu’. The cotton required for the manufacture of these items is procured from Tamilnadu and the ‘Kasavu’ from Surat, a place reputed for making ‘Kasvu’ in the State of Gujarat. The processing of yarns used for weaving is generally known to the weavers and is not special to any geographical elements of Balaramapuram. The quality of the products is connected with the equipment used for weaving. The ‘Reeds’ in the weaving loom are made out of bamboo pieces.

This, according to the traditional weavers, helps them to adjust the gap between yarns, which is very narrow when compared to the clothes manufactured using metal reeds. The weaving is also done by hand. It is through the techniques of hand weaving and the particular nature of the looms used by the traditional weavers that makes the product look very fine and comfortable for use. It is these features that make the products from this place unique and reputed in the market. Balaramapuram handlooms have gained good markets in Kerala and nearby States. They are also exporting limited quantities to the Middle East where large numbers of people from Kerala are working. See supra n. 232

101 Madhubani painting or Mithila painting is a style of Indian painting, practiced in the Mithila region of Bihar state, India and the adjoining parts of Terai in Nepal. In the present time the main artists include Smt. Bharti Dayal Ganga Devi, Smt. Bua Devi, Late Smt. Jagdamba Devi, Late Smt. Sita Devi, and Smt. Mahasundari Devi and others. Madhubani painting got official recognition in 1970 when the President of India gave an award to Mrs. Jagdamba Devi of Village Jitbarpur near Madhubani. Beside her, other painters, Mrs. Sita Devi, Mrs. Mahasundari Devi, Mrs. Godavari Dutt, Mrs. Bharti Dayal and Bua Devi were also given National Awards in this Art by President of India. Sm.t Bharti Dayal was awarded again by All India Art and Craft society for Millennium Award and Smt. Mahasundari Devi was again awarded, this time Padma Shri by the Government of India in 2011. What is Unique in Bharti’s work is the fact that she centers her Art to ‘heritage’ style and yet manages to create an entirely modern and contemporary work from it. A surge of fantasy in her work makes them appear fresh and Graceful. Her work is experimental and authentic. A collection of some samples of Mithila’s domestic arts may be seen in the Chandradhari Museum, Darbhanga. W.G.
Archer has also a collection of Mithila paintings and so has Upendra Maharathi, the Artist, under whose supervision a collection of Bihar’s folk art and craft has been built up at the Bihar Government Institute of Industrial Design, Digha, Patna. Asha Verma, born in Darbhanga, is dedicated to promote Madhubani art through her research work and her Madhubani painting workshop popularly known as Ashas’ creations at Sri Krishna Nagar, Patna. See Upendra Thakur, *Madhubani Paintings* New Delhi: Abhinav Publications (2011)


104 Supra n. 47

105 See generally Provisional Agenda Item 13 of the World Health Organisation in the Fifty-second Session at Brunei Darussalam 10-14 September (2001)