Chapter 4

TRADITIONAL KNOWLEDGE AND GEOGRAPHICAL INDICATIONS

INTRODUCTION

Human communities have always generated, refined and passed on knowledge from generation to generation. Such "traditional" knowledge"[1] is often an important part of their cultural identities. Traditional knowledge has played, and still plays, a vital role in the daily lives of the vast majority of people. Traditional knowledge is essential to the food security and health of millions of people in the developing world. In many countries, traditional medicines provide the only affordable treatment available to poor people. In developing countries, up to 80% of the population depend on traditional medicines to help meet their healthcare needs.[2] In addition, knowledge of the healing properties of plants has been the source of many modern medicines. As we note in Chapter 3, the use and continuous development by local farmers of plant varieties and the sharing and diffusion of these varieties and the knowledge associated with them play an essential role in agricultural systems in developing countries.

Only recently, however, has the international community sought to recognise and protect traditional knowledge. In 1981, WIPO and UNESCO adopted a model law on folklore. In 1989 the concept of Farmers' Rights was introduced by the FAO into its International Undertaking on Plant Genetic Resources and in 1992 the Convention on Biological Diversity (CBD) highlighted the need to promote and preserve traditional knowledge.[3] In spite of these efforts which have spanned two decades, final and universally acceptable solutions for the protection and promotion of traditional knowledge have not yet emerged.

The CBD also set out principles governing access to genetic resources and the knowledge associated with them, and the sharing of benefits arising from such access. We therefore consider the relationship between the IP system and the access and benefit sharing principles of the CBD in the context of both knowledge, traditional or otherwise, and genetic resources.

We also consider here, although it is largely a separate issue, whether Geographical Indications (GIs) have a role to play in promoting development, and the issues relevant to developing countries in the current discussions on this issue in the TRIPS Council.

Thus in this chapter we examine the following questions:

- What is the nature of traditional knowledge and folklore and what do we mean by its protection?
- How can the existing IP system be used to protect and promote traditional knowledge?
- What modifications of the IP system might improve its protection?
- How can the IP system support the principles of access and benefit sharing enshrined in the Convention on Biological Diversity (CBD)?
- Is the protection of Geographical Indications important for developing countries?

Box 4.1 Biopiracy

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

The following have been described as "biopiracy":

a) **The granting of 'wrong' patents.** These are patents granted for inventions that are either not novel or are not inventive having regard to traditional knowledge already in the public domain. Such patents may be granted due either to oversights during the examination of the patent or simply because the patent examiner did not have access to the knowledge. This may be because it is written down but not accessible using the tools available to the examiner, or because it is unwritten knowledge. A WIPO led initiative to document and classify traditional knowledge seeks to address some of these problems.

b) **The granting of 'right' patents.** Patents may be correctly granted according to national law on inventions derived from a community's traditional knowledge or genetic resources. It could be argued this constitutes "biopiracy" on the following grounds:

- Patenting standards are too low. Patents are allowed, for instance, for inventions which amount to little more than discoveries. Alternatively, the national patent regime (for example, as in the US) may not recognise some forms of public disclosure of traditional knowledge as prior art.[4]
- Even if the patent represents a genuine invention, however defined, no arrangements may have been made to obtain the prior informed consent (PIC)[5] of the communities providing the knowledge or resource, and for sharing the benefits of commercialisation to reward them appropriately in accordance with the principles of the CBD.

TRADITIONAL KNOWLEDGE

Background

A number of cases relating to traditional knowledge have attracted international attention. As a result, the issue of traditional knowledge has been brought to the fore of the general debate surrounding intellectual property. These cases involve what is often referred to as "biopiracy" (See Boxes 4.1 and 4.2). The examples of turmeric, neem and ayahuasca illustrate the issues that can arise when patent protection is granted to inventions relating to traditional knowledge which is already in the public domain. In these cases, invalid patents were issued because the patent examiners were not aware of the relevant traditional knowledge. In another example, a patent was granted on a plant species called Hoodia. Here, the issue was not whether the patent should or should not have been granted, but rather on whether the local people known as the San, who had nurtured the traditional knowledge underpinning the invention, were entitled to receive a fair share of any benefits arising from commercialisation.

Partly as a result of these well known cases, many developing countries, holders of traditional knowledge, and campaigning organisations are pressing in a multitude of fora for traditional knowledge to be better protected. Such pressure has led, for example, to the creation of an Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore in WIPO. The protection of traditional knowledge and folklore is also being discussed within the framework of the CBD and in other international organisations such as UNCTAD, WHO, FAO and UNESCO.[6] In addition, the Doha WTO Ministerial Declaration highlighted the need for further work in the TRIPS Council on protecting traditional knowledge.[7]

The Nature of Traditional Knowledge and the Purpose of Protection

How can traditional knowledge be defined? Whilst the vast majority of the knowledge is old in the sense that it has been handed down through the generations, it is continually refined and new knowledge developed, rather as the modern scientific process proceeds by continual incremental improvement rather than by major leaps forward. One of the speakers at our conference suggested that the term "folklore" be replaced by the more appropriate "expressions of culture" which represents living, functional traditions, rather than souvenirs of the past. Whilst most traditional knowledge and folklore is passed on orally, some of it, such as textile designs and Ayurveda medicinal knowledge, is codified. The groups that hold traditional knowledge are very diverse: individuals, groups or groups of communities may all be custodians. Such communities might be indigenous to the land or descendents of later settlers. The nature of the knowledge is also diverse: it covers, for example, literary, artistic or scientific works, song, dance, medical treatments and practices and agricultural technologies and techniques.

Whilst a number of definitions for traditional knowledge and folklore have been put forward, there is no widely acceptable definition for either of them. It is not only the broad scope of traditional knowledge that has confounded the debate so far. There is also some confusion about exactly what is meant by "protection" and its purpose. It should certainly not be equated directly with the use of the word "protection" in its IP sense. In its report on a series of fact-finding missions, WIPO[8] sought to summarise the concerns of traditional knowledge holders as follows:

- concern about the loss of traditional life styles and of traditional knowledge, and the reluctance of the younger members of the communities to carry forward traditional practices
- concern about the lack of respect for traditional knowledge and holders of traditional knowledge
- concern about the misappropriation of traditional knowledge including use of traditional knowledge without any benefit sharing, or use in a derogatory manner
- lack of recognition of the need to preserve and promote the further use of traditional knowledge.

Box 4.2 Controversial Patent Cases involving Traditional Knowledge and Genetic Resources

Turmeric

Turmeric *(Curcuma longa)* is a plant of the ginger family yielding saffron-coloured rhizomes used as a spice for flavouring Indian cooking. It also has properties that make it an effective ingredient in medicines, cosmetics and as a colour dye. As a medicine, it is traditionally used to heal wounds and rashes.

- In 1995, two Indian nationals at the University of Mississippi Medical Centre were granted US patent no. 5,401,504 on "use of turmeric in wound healing".
- The Indian Council of Scientific and Industrial Research (CSIR) requested the US Patent and Trademark Office (USPTO) to re-examine the patent.
- CSIR argued that turmeric has been used for thousands of years for healing wounds and rashes and therefore its medicinal use was not novel.
- Their claim was supported by documentary evidence of traditional knowledge, including an ancient Sanskrit text and a paper published in 1953 in the Journal of the Indian Medical Association.
- Despite arguments by the patentees, the USPTO upheld the CSIR objections and revoked the patent.

Observations: The turmeric case was a landmark case as it was the first time that a patent based on the traditional knowledge of a developing country had been successfully challenged. The legal costs incurred by India in this case have been calculated by the Indian Government to be about at US $10,000.

Neem

Neem *(Azadirachta indica)* is a tree from India and other parts of South and Southeast Asia. It is now planted across the tropics because of its properties as a natural medicine, pesticide and fertilizer. Neem extracts can be used against hundreds of pests and fungal diseases that attack food crops; the oil extracted from its seeds is used to treat colds and flu; and mixed in soap, it is believed to offer low cost relief from malaria, skin diseases and even meningitis.

- In 1994 the EPO granted European Patent No. 0436257 to the US Corporation W.R. Grace and USDA for a "method for controlling fungi on plants by the aid of a hydrophobic extracted neem oil".
- In 1995 a group of international NGOs and representatives of Indian farmers filed a legal opposition against the patent.
- They submitted evidence that the fungicidal effect of extracts of neem seeds had been known and used for centuries in Indian agricultural to protect crops, and thus was the invention claimed in EP257 was not novel.
- In 1999 the EPO determined that according to the evidence "all features of the present claim have been disclosed to the public prior to the patent application… and [the patent] was considered not to involve an inventive step".
- The patent was revoked by the EPO in 2000.

Ayahuasca

For generations, shamans of indigenous tribes throughout the Amazon Basin have processed the bark of *Banisteriopsis caapi* to produce a ceremonial drink known as "ayahuasca". The shamans

use ayahuasca (which means "vine of the soul") in religious and healing ceremonies to diagnose and treat illnesses, meet with spirits, and divine the future.

An American, Loren Miller obtained US Plant Patent 5,751 in June 1986, granting him rights over an alleged variety of *B. caapi* he had called "Da Vine". The patent description stated that the "plant was discovered growing in a domestic garden in the Amazon rain-forest of South America." The patentee claimed that Da Vine represented a new and distinct variety of B. caapi, primarily because of the flower colour.

The Coordinating Body of Indigenous Organizations of the Amazon Basin (COICA) – an umbrella organisation representing over 400 indigenous groups – learned of the patent in 1994. On their behalf the Center for International Environmental Law (CIEL) filed a re-examination request on the patent. CIEL protested that a review of the prior art led that Da Vine was neither new nor distinct. They argued also that the granting of the patent would be contrary to the public and morality aspects of the Patent Act because of the sacred nature of *Banisteriopsis caapi* throughout the Amazon region. Extensive, new prior art was presented by CIEL, and in November 1999, the USPTO rejected the patent claim agreeing that Da Vine was not distinguishable from the prior art presented by CIEL and therefore the patent should never have been issued. However, further arguments by the patentee persuaded the USPTO to reverse its decision and announce in early 2001 that the patent should stand.

Observation: Because of the date of filing of the patent, it was not covered by the new rules in the US on *inter partes* re-examination. CIEL were therefore unable to comment on the arguments made by the patentee that led to the patent being upheld.

Hoodia Cactus

The San, who live around the Kalahari Desert in southern Africa, have traditionally eaten the Hoodia cactus to stave off hunger and thirst on long hunting trips. In 1937, a Dutch anthropologist studying the San noted this use of Hoodia. Scientists at the South African Council for Scientific and Industrial Research (CSIR) only recently found his report and began studying the plant.

In 1995 CSIR patented Hoodia's appetite-suppressing element (P57). In 1997 they licensed P57 to the UK biotech company, Phytopharm. In 1998, the pharmaceutical company Pfizer acquired the rights to develop and market P57 as a potential slimming drug and cure for obesity (a market worth more than £6 billion), from Phytopharm for up to $32 million in royalty and milestone payments.

On hearing of possible exploitation of their traditional knowledge, the San People threatened legal action against the CSIR on grounds of "biopiracy." They claimed that their traditional knowledge had been stolen, and CSIR had failed to comply with the rules of the Convention on Biodiversity, which requires the prior informed consent of all stakeholders, including the original discoverers and users.

Phytopharm had conducted extensive enquiries but were unable to find any of the "knowledge holders". The remaining San were apparently at the time living in a tented camp 1500 miles from their tribal lands. The CSIR claimed they had planned to inform the San of the research and share the benefits, but first wanted to make sure the drug proved successful.

In March 2002, an understanding was reached between the CSIR and the San whereby the San, recognised as the custodians of traditional knowledge associated with the Hoodia plant, will receive a share of any future royalties. Although the San are likely to receive only a very small percentage of eventual sales, the potential size of the market means that the sum involved could

still be substantial. The drug is unlikely to reach the market before 2006, and may yet fail as it progresses through clinical trials.

Observations: This case would appear to demonstrate that with goodwill on all sides, mutually acceptable arrangements for access and benefit sharing can be agreed. The importance of intellectual property in securing future benefits appears to have been recognised by all parties including the San.

Another source more succinctly classified these and other possible reasons for protecting traditional knowledge as:

- equity considerations – the custodians of traditional knowledge should receive fair compensation if the traditional knowledge leads to commercial gain
- conservation concerns – the protection of traditional knowledge contributes to the wider objective of conserving the environment, bio-diversity and sustainable agricultural practices
- preservation of traditional practices and culture – protection of traditional knowledge would be used to raise the profile of the knowledge and the people entrusted with it both within and outside communities
- prevention of appropriation by unauthorised parties or avoiding "biopiracy"
- promotion of its use and its importance to development.[9]

A single solution can hardly be expected to meet such a wide range of concerns and objectives. The type of measures required to prevent misappropriation may not be the same, indeed may not be compatible, with those needed to encourage the wider use of traditional knowledge. A multiplicity of complementary measures will almost certainly be required, many of which will be outside the field of intellectual property. Indeed, underlying the debate may be a much bigger issue such as the position of indigenous communities within the wider economy and society of the country in which they reside, and their access to or ownership of land they have traditionally inhabited. In that sense, concerns about the preservation of traditional knowledge, and the continued way of life of those holding such knowledge, may be symptomatic of the underlying problems that face these communities in the face of external pressures.

However, we intend to limit our consideration to how the intellectual property system might help address these concerns. Much has already been written on this subject and many international organisations, in particularly WIPO, have started to consider whether the existing system of intellectual property has a role to play or whether new forms of protection will be required.

Managing the Debate on Traditional Knowledge

As noted above, a large number of bodies including WIPO, the CBD, UNCTAD and WTO are discussing the protection of traditional knowledge. These debates have rightfully focused on understanding the issue rather than on developing international norms. Only with a deeper understanding and greater practical experience at national or regional level would it be realistic to develop an international system of protection for traditional knowledge. It is essential that all of the agencies considering the issue work together to avoid unnecessary duplication and to ensure that the debate includes as many different views as possible. In this respect it has been suggested to us that an organisation such as WIPO, which deals exclusively with intellectual property matters, may not be the most appropriate forum to consider traditional knowledge in all its aspects.[10] We believe however that no single body is likely to have the capacity, expertise or resources to handle all aspects of traditional knowledge. Indeed it is our view that a multiplicity of measures, only some of them IP-related, will be necessary to protect, preserve and promote traditional knowledge.

There is much to gain at this early stage by considering the issue in a number of fora, while ensuring coherent approaches are developed and that effort is not duplicated.

Making Use of the Existing IP System to Protect and Promote Traditional Knowledge

Examples are emerging which illustrate how the current intellectual property system can be utilised to commercialise traditional knowledge or prevent its misuse. For example, Aboriginal and Torres Strait Islander artists in Australia have obtained a national certification trademark.[11] Like any other trademark, this certification mark or Label of Authenticity is intended to help promote the marketing of their art and cultural products and deter the sale of products falsely claiming to be of Aboriginal origin.

In recent surveys of the existing protection of traditional knowledge and folklore, a number of countries have provided further examples of how IP tools have been utilised to promote and protect traditional knowledge and folklore.[12] These include the use of copyright protection in Canada to protect tradition-based creations including masks, totem poles and sound recordings of Aboriginal artists; the use of industrial designs to protect the external appearance of articles such as head dresses and carpets in Kazakhstan and the use of geographical indications to protect traditional products such as liquors, sauces and teas in Venezuela and Vietnam.

The ability to extend the life of trademarks indefinitely and the possibility of collective ownership of such rights suggest that they may be especially suitable for protecting traditional knowledge. This is also the case with geographical indications, which may be used to protect traditional products or crafts if particular characteristics of such products can be attributed to a particular geographical origin. However, trademarks and geographical indications can only prevent the use of the protected marks or indications; they do not protect the knowledge, or the technologies embracing that knowledge, as such.

Other IP rights, especially those requiring some form of novelty or those with fairly limited periods of protection, seem less appropriate for protecting traditional knowledge. Nevertheless it is clear from these surveys, and indeed other research, that existing IPRs do have a role to play in protecting traditional knowledge. Whether that role is a significant one remains to be seen. Experience elsewhere would suggest that the impact may not be great, not least because of the high cost of obtaining and enforcing rights. If the majority of small companies in developed countries have found the intellectual property system, particularly the patent system, to be unattractive,[13] then it seems unlikely that local communities in developing countries, or individuals within such communities, will derive much benefit.

Sui Generis Protection of Traditional Knowledge

Some countries have already decided that the existing intellectual property system is not, on its own, adequate to protect traditional knowledge. A number of these have enacted or are in the process of enacting *sui generis* systems of protection.[14]

The Philippines has enacted legislation, and is considering further provisions,[15] giving indigenous communities rights over their traditional knowledge. These rights extend to controlling access to ancestral lands, access to biological and genetic resources and to indigenous knowledge related to these resources. Access by other parties will be based on the prior informed consent (PIC) of the community obtained in accordance with customary laws. Any benefits arising from genetic resources or associated knowledge will be equitably shared. The legislation however seeks to maintain the free exchange of biodiversity among local communities. The law also seeks to ensure that indigenous communities are able to participate at all levels of decision-making.

Whilst the primary objectives of these pieces of legislation is to recognise, protect and promote the rights of communities and indigenous people, including those relating to biological resources and associated traditional knowledge, they also recognise the potential for exploiting these resources. However, Guatemalan law also seeks to preserve and promote the wider use of its traditional knowledge by placing expressions of national culture, including for example medicinal knowledge and music, under the protection of the state.[16] Such expressions cannot under the law be sold or be subject of any remuneration. Thus, different types of models are being developed at the national level, seeking to adapt legislation and practice to local needs.

A particularly important question is the extent to which any form of protection recognises the customary laws under which the knowledge evolved. Countries such as Bangladesh, and organisations such as the AU,[17] are considering *sui generis* legislation that provides community-based rights over biological resources and associated traditional knowledge and are seeking to give increased recognition to the cultural and customary practices of communities. The *sui generis* system of protection in the Philippines also takes account of customary laws.

The Australian Federal Court has considered the relevance of customary Aboriginal laws and practices in a case of copyright infringement. Although the Court found that it was not able to "recognise the infringement of ownership rights of the kind which reside under Aboriginal law in the traditional owners of the dreaming stories and the imagery such as that used in the artworks of the present applicants," it did take into account the harm suffered by the aboriginal artists in their cultural environment when considering damages.[18] Whilst such decisions give some degree of recognition to customary laws, they obviously do not go as far as some would like. In our consultations on this subject several people called for greater recognition of customary laws.[19]

Recognition of customary laws, whether they are specifically related to traditional knowledge or not, raises issues beyond the scope of this report. We believe nevertheless that customary laws relating to traditional knowledge should be respected and, if possible, recognised more widely. Further work to meet these objectives, as for example recently mandated by the 6th Conference of the Parties of the CBD, should be supported.[20]

Whether these national systems as they evolve will have sufficient common characteristics to enable the development of an international *sui generis* system remains to be seen. We recognise that there is continuing pressure for the establishment of an international *sui generis* system, as recently articulated by the G15 Group of developing countries.[21]

With such a wide range of material to protect and such diverse reasons for "protecting it", it may be that a single all-encompassing *sui generis* system of protection for traditional knowledge may be too specific and not flexible enough to accommodate local needs.

As we have discussed already, the ability to protect, promote and exploit traditional knowledge does not necessarily depend on the presence of IP rights. Bringing together, for example, local innovators and entrepreneurs may be much more relevant. Whatever measures are put in place or whatever tools are utilised, exploitation is likely to raise the profile of traditional knowledge and local innovation within communities and encourage greater involvement by younger members of the community. This is especially likely to happen if tangible economic returns are generated. However it is important to remember that not all holders of traditional knowledge would want to see their knowledge exploited in this way. A participant in one of our expert workshops, a Kechuan Indian from Peru, made this point to the Commission. For many local communities, he explained, the concept of wealth is completely different to that found in the western world. For such communities, the imperative is to be able to ensure that their traditional knowledge and the customary laws governing it are preserved and respected, rather than to obtain monetary compensation. He also noted that there was already probably an unrealistic expectation among traditional knowledge holders of the possible economic value of their knowledge. Such expectations are of course raised as a result of high profile cases such as the Hoodia example (Box 4.2).

Misappropriation of Traditional Knowledge

The nature of traditional knowledge is such that more of it is transmitted orally than written down. This poses particular problems when parties not authorised by the holder of that knowledge seek to obtain IPRs over it. In the absence of any accessible written record, a patent examiner in another country is unable to access documentation that would challenge the novelty or inventiveness of an application based on traditional knowledge. The only option for an aggrieved party, be it the holders of the knowledge, or someone representing them, is to challenge the patent during the granting process or after grant, where national laws permit. For instance, this is what the Indian Government achieved by overturning the patents on basmati (see Box 4.5 below) and turmeric in the US.

The presence of administrative or quasi-judicial patent opposition or re-examination procedures has facilitated the overturning of these patents. In the absence of such procedures it would have been necessary to instigate proceedings before the relevant court with the inherent cost and time implications. Even with such procedures, it is extremely difficult and costly for developing countries to monitor and challenge IPRs issued all around the world. We suggest later in this chapter a possible way of assisting countries to monitor patents granted on inventions consisting of, or developed from, acquired biological material and associated knowledge.

Box 4.3 Traditional Knowledge Digital Library (TKDL) – An Indian View

In 1999, following the ultimately successful, but expensive, Indian challenge of the turmeric and basmati patents granted by USPTO, it was agreed that the Indian National Institute of Science Communication (NISCOM) and the Department of Indian System of Medicine and Homoeopathy (ISM&H) would collaborate to establish a Traditional Knowledge Digital Library (TKDL).

The TKDL project is initially targeting Ayurveda (a traditional Indian system of medicine), and proposes to document the knowledge available in public domain (the existing Ayurveda literature) in digitised format. Information from about 35,000 Slokas (Versus & Prose) and formulations will be inputted on a database, and it is expected that the web site will have approximately 140,000 Ayurveda pages. The data will be made available in several international languages (English, Spanish, German, French, Japanese and Hindi).

The Traditional Knowledge Resource Classification (TKRC) is an innovative, structured classification system that has been designed to facilitate the systematic arrangement, dissemination and retrieval of the information in the traditional knowledge DL. The TKRC is based on the International Patent Classification system (IPC), with the information classified under section, class, subclass, group and subgroup for the convenience of its use by the international patent examiners. But it provides greater definition of traditional knowledge information by expanding one IPC group (i.e. AK61K35/78 related to medicinal plants) into about 5000 subgroups.

The TKDL will give legitimacy to existing traditional knowledge, and by ensuring ease of retrieval of traditional knowledge-related information by patent examiners will hopefully prevent the granting of patents, such as the turmeric and neem cases discussed above which claim subject matter 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 USPTO, and the EPO are examining how such libraries can be integrated into the existing search tools used by patent offices.

Patent applications claiming traditional knowledge already in the public domain should not be granted. The problem is that the knowledge tends not to be documented, or if it is, it is unlikely to be easily accessible to a patent examiner. In particular, information on traditional knowledge is not likely to be found in the type of patent-based information that patent offices rely most on when assessing novelty and inventiveness. To address this problem, WIPO and a number of developing countries led by India and China are seeking to develop traditional knowledge digital libraries (see Box 4.3). These digital libraries will not only detail in writing considerable amounts of traditional knowledge already in the public domain, but will do so taking into account international classification standards (the WIPO International Patent Classification (IPC) system) so that the data will be easily accessible to patent examiners.

WIPO is also examining the extent to which information on traditional knowledge is already available on the Internet. Initial findings from WIPO indicate that the amount of traditional knowledge-related information available is substantial and growing. However, much of it is not in a form that would make it either searchable or useable by patent examiners. [22]

The greater documentation of traditional knowledge may not only be of value in preventing the granting of unwarranted patents but also, more importantly, it may contribute to the preservation, promotion and possible exploitation of traditional knowledge. In this respect it is crucial that the documentation process does not prejudice possible IPRs in the material being documented. India's National Innovation Foundation provides an example of an attempt to address these issues.[23] One of the concerns raised by both WIPO, and a number of developing countries, about many of the databases unearthed by WIPO was whether the information had been recorded with the prior informed consent of the holders of the knowledge. During discussions in WIPO on the documentation of traditional knowledge, differences were also evident among developing countries as to the type of data that could or should be included in any databases. Some countries, for example, argued that such databases are appropriate only for information that was already publicly available in a codified form. Others indicated that traditional knowledge that had not yet been codified could also be included.

Digital libraries of traditional knowledge should, as soon as it is practical, be incorporated into the minimum search documentation lists of patent offices therefore ensuring that the data contained within them will be considered during the processing of patent applications. Holders of the traditional knowledge should play a crucial role in deciding whether such knowledge is included in any databases and should also benefit from any commercial exploitation of the information.

Traditional medicine is an area that has the potential to be quite well documented. In Lao People's Democratic Republic, for example, the Government established the Traditional Medicines Resource Centre (TRMC) which is working with local healers to document details of all traditional medicines with a view to promoting a sharing of practices within Laos. The TRMC is also collaborating with the International Co-operative Biodiversity Group (ICBG) in efforts to discover prospective medicinal products. Any benefits, profits or royalties realised from plants and knowledge recovered during the collaboration will be shared with all the communities involved.[25]

IPRs clearly may have a role in exploiting products based on traditional medicine. But the primary objective must be to promote the application of this knowledge to improve human health, rather than to generate income. Indeed it would be unfortunate if the objective of benefit sharing based on commercialisation resulted only in a few people getting richer at the price of restricting access to medicines needed particularly by the poor. The WHO Traditional Medicine Strategy for 2002-2005 clearly bring outs the public health objective.[26] Lessons learnt from this exercise and other similar initiatives should be freely shared and technical assistance provided to assist other countries managing initiatives relating to documentation.

It must however be recognised that much traditional knowledge will continue to be undocumented. The concept of absolute novelty whereby any disclosure including **through use,** anywhere in the world, is sufficient to destroy the novelty of an invention therefore remains a necessary safeguard. Without this safeguard, patents could continue to be granted for traditional knowledge that is already in the public domain, albeit not through written disclosure. Some countries do not include use outside their country as "prior art."

Those countries that only include domestic use in their definition of prior art, should give equal treatment to users of knowledge in other countries. In addition, account should be taken of the unwritten nature of much traditional knowledge in any attempts to develop further the patent system internationally.

For some communities the granting of IPRs such as patents over their knowledge can cause great offence. Although provisions exist in most countries to prevent the granting of IPRs on moral grounds, it is questionable whether intellectual property offices will be able to apply them in respect of small indigenous communities. For example, moral grounds for rejecting trademark applications have existed for some time in New Zealand but it has now been considered necessary to define more clearly the scope of this provision. The amendment under consideration would prevent the registration of a trademark where, on reasonable grounds, the use or registration of the mark is likely to offend a significant section of the community, including the Maori.[27] Such measures as this, together with the greater use of searchable databases of traditional knowledge already in the public domain should go some way to preventing the issuing of IP rights on material that is not novel, obvious or likely to cause offence.

However, as we have noted, there is a second group of patents and indeed other IPRs that cause concern. These are rights which essentially meet the usual criteria for patentability or protection but which nevertheless:

- are based on, or consist of, material obtained illegally or without the consent of the holder of the material
- do not fully recognise the contribution made by others to the invention either in terms of ownership of the rights, or in the sharing of any benefits accruing from the commercialisation of the patented invention.

These concerns do not apply just to patents relating to traditional knowledge although, in light of the CBD, the most contentious patents in this area are likely to be those relating to biological resources and/or traditional knowledge associated with such resources. In the Hoodia case, the concern was essentially not about whether the patents should have been granted, but about whether the San would receive a fair share of the benefits of commercialisation. We address possible ways of providing a more equitable balance in such cases below.

ACCESS AND BENEFIT SHARING

Background

As we have seen, one of the main issues in the debate on traditional knowledge is the relationship between intellectual property protection and the ownership and rights pertaining to the knowledge on which the intellectual property right has been based. The context of our discussion of this issue is to consider also how to promote the objectives related to benefit sharing and prior informed consent set out in the CBD. Since the international community, albeit with some important exceptions, has ratified both TRIPS and the CBD there is an obligation to ensure that they reinforce, rather than contradict one another

Convention on Biological Diversity (CBD)

The Convention, which was agreed in 1992, seeks to promote the conservation of biodiversity and the equitable sharing of benefits arising out of the utilisation of genetic resources.[28] It asserts the sovereign rights of nations over their national resources, and their right to determine access according to national legislation with the aim of facilitating the sustainable use of these resources, promoting access and their common use. It notes that access to genetic resources should be on the basis of prior informed consent, and on mutually agreed terms that provide fair and equitable sharing of the results of R&D and the benefits of commercialisation and utilisation.[29] It also calls for the fair and equitable sharing of the benefits derived from the use of traditional knowledge.[30]

In respect of intellectual property, the CBD states that access and transfer (of genetic resources) should be consistent with the "adequate and effective protection of intellectual property rights." Governments should put in place policies to ensure that, particularly for developing countries, access to genetic resources takes place on mutually agreed terms. It notes that patents and other IPRs may have an influence on implementation of the Convention, and governments should co-operate (subject to national and international law) in order to ensure that such rights are supportive of and do not run counter to the CBD's objectives.[31]

The Governing Body of the CBD has now agreed guidelines on access and benefit sharing as a guide to countries when drafting national legislation.[32] But countries face difficult decisions, both practical and conceptual, in putting benefit sharing into practice. First, the resources in question are often not "owned" by anyone in particular, but are the heritage of one or more communities, which are not necessarily cohesive, or all living in one country. Secondly, while some genetic resources can be traced to very specific areas and habitats, in other cases they comprise components from many countries, in which case benefit-sharing arrangements will be totally impractical. Thirdly, because of the diversity of national circumstances or indeed those within nations in relation, for example, to their cultural, economic or institutional conditions, it is very difficult to devise legislation and practices which cover that diversity in ways that facilitate implementation of such measures. Indeed, care will be necessary to ensure that legislation and practices that seek to give effect to the CBD do not in fact unnecessarily restrict or discourage the legitimate use of genetic resources, whether with a view to commercialisation or in terms of scientific research. There is some evidence that the tightening of restrictions in some countries has hindered the access of biologists studying genetic resources.[33]

While recognising these difficulties, our focus is on how intellectual property rules might need to be modified in both developed and developing countries, to provide support for access and benefit sharing. Many argue that since TRIPS says nothing about the CBD, nor the CBD about TRIPS, there can be no conflict between the two agreements. Moreover it is argued, TRIPS supports the CBD in that patenting often engenders commercialisation which generates the benefits that are a prerequisite to any benefit sharing arrangement. Others have countered this argument by pointing out that since patenting based on the use of genetic resources is allowed under TRIPS, (subject to meeting patentability criteria), this does not support the objectives of the CBD because the criteria for patentability do not include prior informed consent or mutually agreed terms for benefit sharing. While the CBD asserts national sovereignty over genetic resources, there is nothing in TRIPS to provide support to these CBD objectives. Foreign companies may obtain private rights derived from national resources, but TRIPS is silent on obligations set out by the CBD.

Nevertheless even those, mainly from industry, who argue there is no conflict between the CBD and TRIPS, broadly support the underlying principles of the CBD. In particular, since the CBD asserts the principle that nations have sovereignty over their natural resources, those industries that are interested in making use of genetic resources need to ensure that prospecting activities take place on the basis of prior informed consent, and agreements on benefit sharing. If they ignore these principles, then any access to these resources may not be legitimate.

Given the understandable difficulties faced by developing countries in formulating and enforcing laws on access and benefit sharing, we take the view that developed and developing countries should do more to ensure their IP systems help to promote the objectives of the CBD, and to promote the underlying mutuality of interest that should exist between the providers of genetic resources, mainly in developing countries, and the users who are mainly based in developed countries.

Disclosing the Geographical Origin of Genetic Resources in Patent Applications

One suggestion is that applicants for IP rights which consist of, or are developed from, genetic resources should identify the source of these resources and provide proof that they were acquired with the prior informed consent of the country from which they were taken. Examples of countries who have introduced such requirements into their law are given in Box 4.4.

The territorial nature of patents means that the requirements referred to above apply only in respect of patents issued in those particular countries or regions. For example, they do not have any bearing on patents issued in the US or Japan. This, it is argued, justifies a more international solution to this issue.

A requirement in all patent laws for the patent applicant to disclose the source of origin of the genetic resources and evidence of prior informed consent would, it is argued, increase transparency and, simply by providing information, assist in the enforcement of any access and benefit sharing agreements. It might also bring to light cases similar to the Hoodia example.

Opponents argue that seeking to counter illegal access or unauthorised use through patent law does not address instances where patenting is not involved. Moreover, introducing such a requirement only in respect of genetic resources and associated knowledge, would discriminate against other cases where patents may have been obtained as the result of illegal or unauthorised activities. It is also argued that this would lead to more legal uncertainty and create "serious difficulties in practice" since it is "often not clear where a biological sample originated."[34] Even if the immediate source of material is known, this may not be the original source, especially where material is obtained, as is very common, from *ex situ* collections that have been built up over many years.

It is difficult to judge how real any such uncertainty would be. Where a company is interested in a particular genetic resource it seems likely that it would endeavour to discover as much information about that material as possible because of its relevance to its possible utility (for example, how local populations use it). In such cases it is likely that the geographical origin of the resource will be known. In other cases it may be more difficult to establish the precise geographical origin of an individual sample. Nevertheless it seems unlikely, especially for samples obtained after 1992, that some information on the geographical source of a particular sample is not available. Under the terms of the CBD any benefits are to be shared with the country providing the resource irrespective of whether the resource actually originated in that country.[35] The ITPGRFA, as we have seen, provides a different mechanism for plant genetic resources of diverse origin.

One of the stated objectives for requiring disclosure of source of origin and prior informed consent is to encourage compliance with the access and benefit sharing principles of the CBD. However, other mechanisms and incentives exist which may address this objective. Failure to obtain authorisation to access or use material may, for example, lead to court action under the doctrine of misappropriation or breach of contract. But seeking recompense in this way is time-consuming and costly, and of limited use for many holders of traditional knowledge. In addition, the stigma of being identified as a "bio-pirate" may also be an incentive for organisations to ensure the probity of their activities. Known violators of the CBD may be denied future access to material. Such a sanction has already been considered in Bangladesh.[36] Suppliers of material may collectively agree

to supply only to organisations prepared to disclose in any patent applications that they might file full details of any access contracts. It is possible that these incentives alone may be sufficient. Companies and organisations that use or supply biological material or traditional knowledge have already adopted or are considering adopting codes of conduct covering CBD-related activities.[37]

Nevertheless, we believe that it is important to recognise the force of the CBD, even if only a few countries have implemented specific access and benefit sharing legislation. We conclude therefore that where a country has established a clear legal framework governing access to biological material and/or traditional knowledge then that country should be able to take action where IPRs are granted over material or knowledge which was acquired illegally from that country.

Box 4.4 Examples of Patent Legislation incorporating Disclosure of Origin

India: Section 10 (contents of specification) of the Patents Act 1970 as amended by the Patents Second Amendment Act (2002) provides that the applicant must disclose the source and geographical origin of any biological material deposited in lieu of a description. Also Section 25 (opposition to grant of patent) as amended allows for opposition to be filed on the ground that "the complete specification does not disclose or wrongly mentions the source or geographical origin of biological material used for the invention".

Andean Communities: Andean Decision 486 provides in Article 26 that applications for patents shall be filed with the competent national office and shall contain:

h) a copy of the contract for access, if the products or processes for which a patent application is being filed were obtained or developed from genetic resources or by products originating in one of the Member Countries;

i) if applicable, a copy of the document that certifies the license or authorization to use the traditional knowledge of indigenous, African American, or local communities in the Member Countries where the products or processes whose protection is being requested were obtained or developed on the basis of the knowledge originating in any one of the Member Countries, pursuant to the provisions of Decision 391 and its effective amendments and regulations;

Costa Rica: Biodiversity Law 7788 Article 80 (Obliged prior consultation) states that "Both the National Seed Office and the Registers of Intellectual and Industrial Property are obliged to consult with the Technical Office of the Commission (for the Management of Biodiversity) before granting protection of intellectual or industrial property to innovations involving components of biodiversity. They must always provide the certificate of origin issued by the Technical Office of the Commission and the prior informed consent. Justified opposition from the Technical Office will prohibit registration of a patent or protection of the innovation."

Failure to provide the necessary information in any of the cases referred to above could lead to the failure of the application or revocation of the patent.

Europe: Recital 27 of Directive 98/44 on the legal protection of biotechnological inventions provides that the patent application should where appropriate, include information on the geographical origin of biological material if known. But this is entirely voluntary, as it is without prejudice to the processing of patent applications or the validity of rights arising from granted patents.

Indeed we would go further in supporting the objectives of the CBD by arguing that no person should be able to benefit from any IP rights consisting of, or based on, genetic resources or associated knowledge obtained in an illegal manner, or used in an unauthorised way. Those organisations currently considering this issue should examine what measures may be possible within the existing international framework to meet this objective. As well as the possibility of refusing applications or invalidating rights, we would suggest that consideration also be given to declaring such IPRs unenforceable.[38] Such a sanction is already available in the US under the doctrines of "unclean hands" and inequitable conduct, whereby a court will refuse to enforce a patent until the patentee has cleaned his hands or remedied any inequitable conduct or fraud. In interpreting these doctrines the courts have indicated the paramount interest is to ensure that patents issue from "backgrounds free from fraud or other inequitable conduct".[39] The US Supreme Court has noted also that

> "A court of equity acts only when and as conscience commands; and if the conduct of the plaintiff be offensive to the dictates of natural justice, then, whatever may be the rights he possesses, and whatever use he may make of them in a court of law, he will be held remediless in a court of equity".[40]

The principle of equity dictates that a person should not be able to benefit from an IP right based on genetic resources or associated knowledge acquired in contravention of any legislation governing access to that material. In such cases the burden should generally lie with the complainant to prove that the IP holder has acted improperly. However, a precursor for any action is knowledge of the wrong. It is to assist in this respect that we believe that a disclosure requirement of the type discussed above is necessary.

All countries should provide in their legislation for the obligatory disclosure of information in the patent application of the geographical source of genetic resources from which the invention is derived. This requirement should be subject to reasonable exceptions as, for example, where it is genuinely impossible to identify the geographical source of material. Sanctions, possibly of the type discussed above, should be applied only where it can be shown that the patentee has failed to disclose the known source or where he has sought to deliberately mislead about the source. This issue should be considered by the Council for TRIPS, in the context of paragraph 19 of the Doha Ministerial Declaration.

Consideration should also be given to establishing a system whereby patent offices examining patent applications which identify the geographical source of genetic resources or traditional knowledge pass on that information, either to the country concerned, or to WIPO which may act as a depository for patent-related information on alleged "biopiracy." Through these measures it will be possible to monitor more closely the use and misuse of genetic resources

GEOGRAPHICAL INDICATIONS

Background

At the beginning of this chapter we consider the relevance of geographical indications for protecting traditional knowledge. However, geographical indications have a much wider application and for some countries constitute one of the most important categories of intellectual property. This is reflected in the TRIPS Agreement.

Geographical Indications and TRIPS

The negotiations on the geographical indication section of the TRIPS Agreement were among the most difficult.[41] This stemmed from clear divisions between the main proponents of the TRIPS Agreement – the US and EU. In addition, as has been borne out in the subsequent discussions in the

TRIPS Council, divisions also exist among other developed countries and among developing countries. The final text of the agreement reflects these divisions and, in mandating further work, recognises that agreement could not be reached in a number of important areas.

The outcome was that the current text of TRIPS provides a basic standard of protection, and a higher standard specifically for wines and spirits. The inclusion of this higher standard does not refer to the unique characteristics of wines and spirits, but was rather a compromise reached in negotiations. This imbalance in protection has led to demands for additional protection from a number of countries including India, Pakistan, Kenya, Mauritius and Sri Lanka.[42] Other countries, such as Argentina, Chile, and Guatemala argue that extending the additional protection to other products would impose extra financial and administrative burdens on all WTO Members and that these would outweigh any trade benefit. They believe that such burdens would fall most heavily on developing countries.

In the absence of a reliable economic assessment, it is difficult to evaluate the merits of both sets of arguments. They also, of course, reflect differences in perceived economic interest between both developed and developing countries. A few countries, for example Egypt and Paraguay, have already indicated that the additional protection for geographical indications for wines and spirits will be made available under their national laws for other products.[43] It will be interesting to see whether providing such comprehensive additional protection leads to significant additional costs or benefits, in the absence of international recognition.

Multilateral Register of Geographical Indications

As well as providing increased protection for geographical indications on wines and spirits, TRIPS also requires negotiations to be undertaken in the TRIPS Council concerning the establishment of a multilateral register of geographical indications for wines. The Doha Ministerial Conference extended this mandate to negotiate the establishment of a system that includes spirits. The purpose of the register has not been clearly defined. As noted below, groups of countries differ in their views. Some wish to use it as a full international register that would oblige all member countries to provide protection to geographical indications meeting the requirements for registration. Others want it as a voluntary system of registration and source of information.

To date, three different proposals for a multilateral register have been presented. The EU envisages a register that has an effect on all WTO Members irrespective of whether or not they have any geographical indications included on the register.[44] Any WTO Member wishing to challenge the inclusion of a geographical indication in the register is required to notify the country concerned and enter into negotiations with a view to resolving the disagreement. The Hungarian proposal provides that where one WTO Member has successfully challenged the inclusion of a geographical indication on certain specified grounds, then that geographical indication will not need to be protected by other WTO Members.[45] In both of these proposals, inclusion of a geographical indication in the register would constitute a presumption of eligibility for protection under any legal means provided for protecting geographical indications in any WTO Member.

By contrast, the joint proposal from the US, Canada, Chile and Japan provides a system of registration that is binding only on those seeking to participate in the system.[46] Participating members would make use of the register when, for example, examining trademark applications containing or consisting of a geographical indication. Non-participating WTO Members would be encouraged to make similar use of the register. Negotiations on the register are, according to the recent Doha WTO Ministerial Conference, to be completed by the next Conference in Mexico in 2003.

The TRIPS Council Secretariat has already begun to shed some light on how a number of WTO Members, including some developing countries, have met their obligations under TRIPS.[47] The vast majority of countries from which information has been obtained provide specific legislation

covering geographical indications although it is unclear whether this legislation stems directly from the TRIPS Agreement or was already in place to meet, for example, bilateral commitments.

The administrative burden in giving effect to new legislation for those countries without current protection would not appear that great. This is because TRIPS does not currently require any formal national registration system for geographical indications, and the burden and costs of compelling enforcement therefore falls on the holders of the geographical indication, not the government. As mentioned below, however, the costs of ensuring compliance with quality standards and promoting and enforcing geographical indications abroad may be significant.

Box 4.5 Geographical Indications: The Basmati Case

Basmati is a variety of rice from the Punjab provinces of India and Pakistan. The rice is a slender, aromatic long grain variety that originated in this region and is a major export crop for both countries. Annual basmati exports are worth about $300m, and represent the livelihood of thousands of farmers.

The "Battle for Basmati" started in 1997 when US Rice breeding firm RiceTec Inc. was awarded a patent (US5663484) relating to plants and seeds, seeking a monopoly over various rice lines including some having characteristics similar to Basmati lines. Concerned about the potential effect on exports, India requested a re-examination of this patent in 2000. The patentee in response to this request withdrew a number of claims including those covering basmati type lines. Further claims were also withdrawn following concerns raised by the USPTO. The dispute has however moved on from the patent to the misuse of the name "Basmati."

In some countries the term "Basmati" can be applied only to the long grain aromatic rice grown in India and Pakistan. RiceTec also applied for registration of the trademark 'Texmati' in the UK claiming that "Basmati" was a generic term. It was successfully opposed, and the UK has established a code of practice for marketing rice. Saudi Arabia (the world's largest importer of Basmati rice) has similar regulations on the labelling of Basmati rice.

The code states that "the belief in consumer, trade and scientific circles [is] that the distinctiveness of authentic Basmati rice can only be obtained from the northern regions of India and Pakistan due to the unique and complex combination of environment, soil, climate, agricultural practices and the genetics of the Basmati varieties."

But in 1998 the US Rice Federation submitted that the term "Basmati" is generic and refers to a type of aromatic rice. In response, a collective of US and Indian civil society organizations filed a petition seeking to prevent US-grown rice from being advertised with the word "Basmati". The US Department of Agriculture and the US Federal Trade Commission rejected it in May 2001. Neither considered the labeling of rice as "American-grown Basmati" misleading, and deemed "Basmati" a generic term.

The problem is not just limited to the US; Australia, Egypt, Thailand and France also grow basmati type rice and may take the lead from the US and officially deem "basmati" a generic term.

The name "Basmati" (and the Indian and Pakistani export markets) can be protected by registering it as a Geographical Indication. However, India and Pakistan will have to explain why they did not take action against the gradual adoption of generic status of basmati over the last 20 years. For example, India did not lodge a formal protest when the US Federal Trade Commission formally declared "basmati" generic.

The Economic Impact of Geographical Indications

In considering positions to take on the discussions on both the multilateral register and the possible extension of the scope of protection, it is important that developing countries consider carefully the potential costs and benefits. Indeed as we have suggested elsewhere, we believe that comprehensive economic impact assessments need to be undertaken before any new IP-related obligations are introduced for developing countries.

The economic consequences for a developing country are difficult to assess. The main economic benefit of geographical indications would be to act as a quality mark which will play a part in enhancing export markets and revenues. But increased protection, particularly applied internationally, may adversely affect local enterprises which currently exploit geographical indications that may become protected by another party. Thus there will be losses to countries producing substitutes for goods that become protected by geographical indications. A proliferation of geographical indications would tend to reduce their individual value.

It has also been suggested that geographical indications may be of particular interest to a number of developing countries who might have, or might be able to achieve, a comparative advantage in agricultural products and processed foods and beverages.[48] For these countries, seeking and enforcing protection for geographical indications abroad may have economic gains. However the costs involved in such actions, especially enforcement, might be prohibitively high. In addition, prior to seeking protection abroad, it is necessary both to develop and protect the geographical indication in the country of origin. Resources may need to be deployed to ensure that the required quality, reputation or other characteristics of the product covered by the geographical indication are developed and maintained. Effort will also be needed to ensure that the geographical indication does not become an accepted generic term, freely useable by all (see Box 4.5).

In our view it is far from clear whether these countries will be able to gain significantly from the application of geographical indications. By way of example, the Lisbon Agreement, which is an international system of protection administered by WIPO for the protection of appellations of origin, was agreed in 1958.[49] To date only 20 countries (seven of which are developed) have acceded to the agreement, and as of 1998, 766 appellations of origin are protected under the agreement, of which European countries hold 95%.

Even taking into account the well documented weaknesses in the Lisbon Agreement, such as the lack of an appropriate exception for geographical indications that had become generic, that make it unattractive to both developed and developing countries alike, the level of interest, even for those developing countries who deemed it worthwhile to join, seems very limited.[50]

Within the framework of the discussions in the WTO on a multilateral register, it has been proposed that more consideration should be given, inter alia, to the likely cost of introducing the type of register proposed by the EU.[51] A similar call for this type of analysis was made by a number of developing countries during recent discussions in WIPO.[52] However the necessary support to take it forward was not forthcoming from some of the same countries now pressing for such work in the WTO. We, like others, believe only with this type of analysis will developing countries, particularly low income ones, be able to take informed positions on the continuing debates on geographical indications, especially within the WTO.[53]

Further research should be undertaken, as a matter of urgency, by a competent body, possibly UNCTAD, to assess in respect of developing countries:

- **the actual or likely costs of implementing existing geographical indications provisions under TRIPS**
- **what role geographical indications could play in the development of these countries**

- **the likely costs and benefits of extending the current additional protection for wines and spirits to other products**
- **the costs and benefits of the various proposals put forward for establishing a multilateral register of geographical indications.**

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[1] For the remainder of this chapter, references to "traditional knowledge " should be assumed to cover folklore also, unless indicated otherwise.

[2] WHO Fact Sheet No. 271, June 2002.
Source: http: //www.who.int/medicines/organization/trm/factsheet271.doc

[3] Article 8j of CDB provides that " Members should respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices".
Source: http://www.biodiv.org/convention/articles.asp

[4] See Glossary for definition.

[5] See Glossary for definition.

[6] For more information of the various ongoing debates, see for example *"The State of the Debate on TK "*, Background note prepared by the UNCTAD secretariat for the International Seminar on Systems for the Protection and Commercialisation of traditional knowledge, in particular traditional medicines, 3-5 April 2002, New Delhi.
Source: http://www.unctad.org/trade_env/test1/meetings/delhi/statedebateTK.doc

[7] Paragraph 19 of Doha WTO Ministerial Declaration (WTO Document No. WT/MIN(01)/DEC/1) adopted on 14 November 2001, calls for the TRIPS Council to examine the issue of protection of traditional knowledge and folklore.
Source: http://www.wto.org/english/thewto_e/minist_e/min01_e/mindecl_e.doc

[8] WIPO (1999) *"Intellectual Property Needs and Expectations of traditional knowledge Holders"*, WIPO Report on Fact-Finding Missions 1998-1999, WIPO, Geneva (Publication Number 768E).
Source: http://www.wipo.int/globalissues/tk/report/final/index.html

[9] Correa, C. (2001) *"Traditional Knowledge and Intellectual Property"*, QUNO, Geneva.
Source: http://hostings.diplomacy.edu/quaker/new/doc/tkcol3.pdf

[10] Minutes of the Commission on Intellectual Property Rights Workshop on Traditional Knowledge, 24 January 2002.
Source: http://www.iprcommission.org

[11] Source: http://www.niaaa.com.au/label.html

[12] WIPO Reviews of Existing Intellectual Property Protection of TK (WIPO Document No. WIPO/GRTKF/IC/3/7) 25 March 2002.
Source: http://www.wipo.org/eng/meetings/2002/igc/doc/grtkfic3_7.doc) and Folklore (WIPO Document No. WIPO/GRTKF/IC/3/10) 25 March 2002.
Source: http://www.wipo.org/eng/meetings/2002/igc/doc/grtkfic3_10.doc).

[13] McDonald, S. (2001) *"Exploring the hidden costs of Patents - notes of a talk given at Quakers House Geneva 16 May 2001"*, QUNO Occasional Paper 4, QUNO, Geneva. Source:
http://hostings.diplomacy.edu/quaker/new/doc/OP4.pdf

[14] Sui generis system of protection is a distinct system tailored or modified to accommodate the special characteristics of traditional knowledge or folklore. Sui generis systems of protection are already provided in areas such as the protection of plant varieties (UPOV system) and protection of databases (EC Directive 96/9/EC, 11 March 1996.
Source: http://www.eurogeographics.org/WorkGroups/WG1/eu_directive.pdf).

[15] The Indigenous Peoples Rights Act of 1997, Republican Act No. 8371.
Source: http://www.grain.org/docs/philippines-ipra-1999-en.pdf, and The Community Intellectual Rights Protection Act 1994 Senate Bill No. 1841 (still pending).
Source: http://www.grain.org/docs/philippines-cirpa-1994-en.pdf

[16] Cultural Heritage Protection National Law (No. 26-97, as amended in 1998) as explained in WIPO Document No. WIPO/GRtraditional knowledge F/IC/3/7.
Source: http://www.wipo.org/eng/meetings/2002/igc/doc/grtkfic3_7.doc

[17] *"African Model Legislation for the Protection of the Rights of Local Communities, Farmers and Breeders, and for the Regulation of Access to Biological Resources"*, OAU Model Law, 2000. Source:
http://www.grain.org/publications/oau-model-law-en.cfm

[18] Milpurrurru and others v. Indofurn Pty Ltd and others (1995) 30 IPR 209

[19] Minutes of the Commission on Intellectual Property Rights Workshop on Traditional Knowledge, 24 January 2002. Source: http://www.iprcommission.org

[20] Sixth Meeting of the Conference of the Parties to the Convention on Biological Diversity, The Hague, Netherlands, 7-19 April 2002. Decision VI/24 C 3(b) requests further consideration of the role of customary laws and practices in relation to the protection of genetic resources and traditional knowledge, innovations and practices, and their relationship with IPRs. Source: http://www.biodiv.org/decisions/default.asp?lg=0&m=cop-06&d=24

[21] Joint Declaration G-15 Experts Meeting on Science and Technology, *"Sustainable Use of Biodiversity, traditional knowledge and Protection Systems"*, 3-5 April 2002, Caracas. Source: http://www.mct.gov.ve/g15/declaracionbioingles.htm

[22] Inventory of existing online databases containing traditional knowledge documentation data (WIPO Document No. WIPO/GRtraditional knowledge F/IC/3/6 - May 10, 2002). Source: http://www.wipo.org/eng/meetings/2002/igc/doc/grtkfic3_6.doc

[23] As an example the National Innovation Foundation in India seeks to obtain the PIC of local innovators and traditional knowledge holders before disseminating their innovations or knowledge to third parties. Modalities for benefit sharing are also agreed. Source: http://www.nifindia.org/benefit.htm

[24] WIPO Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Third Session, June 2002, Geneva. Source: http://www.wipo.int/eng/meetings/2002/igc/index_3.htm

[25] Riley, M. (2000) "Traditional Medicine Research Centre - A Potential Tool for Protecting Traditional and Tribal Medicinal Knowledge in Laos", *Cultural Survival Quarterly,* vol. 24:4. Source: http://www.cs.org/publications/CSQ/244/riley.htm

[26] WHO Traditional Medicine Strategy for 2002-2005 (WHO Document No. WHO/EDM/TRM/2002.1). Source: http://www.who.int/medicines/library/trm/trm_strat_eng.pdf

[27] For discussion on the Trademark Bill see: http://www.ruddwatts.com/newsroom/publications/ip/newtrademarksbill2001.asp

[28] CBD Article 1

[29] CBD Article 15

[30] See note 3 above.

[31] CBD Article 16

[32] Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilisation. Source: http://www.biodiv.org/decisions/default.asp?lg=0&m=cop-06&d=24

[33] Revkin, A. "Biologists Sought a Treaty; Now They Fault It", *New York Times,* 7 May 2002. Source: http://www.nytimes.com

[34] *"Should patent applicants disclose the origin of biological materials on which they file patents? Should they demonstrate Prior Informed Consent (PIC) for their use?"* ICC Policy statement, April 2002 (Document No. 450/941 Rev. 10). Source: http://www.iccwbo.org/home/statements_rules/statements/2002/should%20patent%20applicants.asp

[35] CBD Article 2

[36] Article 13(3) Biodiversity and Community Knowledge Protection Act of Bangladesh, draft text proposed by the National Committee on Plant Genetic Resources, 29 September 1998. Source: http://www.grain.org/docs/bangladesh-comrights-1998-en.pdf

[37] See the Common Policy Guidelines for Participating Botanic Gardens and other examples highlighted in Laird, S. (ed.) (2002) *"Biodiversity and Traditional Knowledge – Equitable Partnerships in Practice"*, Earthscan, London. pp. 51-53

[38] Pires de Carvalho, N. (2000) *"Requiring Disclosure of the Origin of Genetic Resources and Prior Informed Consent in Patent Applications without Infringing the Trips Agreement: The Problem and the Solution"*, Washington University Journal of Law and Policy, vol. 2, pp.371-401. Source: http://www.law.wustl.edu/Journal/2/p371carvalho.pdf

[39] Precision Instrument Mfg. Co v Auto. Maint. Mach. Co. 324 US 806 (1945)

[40] Keystone Driller Co. v. General Excavator Co., 290 U.S. 240, 245 (1933) quoting Deweese v. Reinhard, 165 U.S. 386, 390 (1887).

[41] Escudero, S. (2001) *"International Protection of Geographical Indications and Developing Countries"* TRADE Working Papers No. 10, South Centre, Geneva. Source: http://www.southcentre.org/publications/geoindication/toc.htm

[42] WTO Document No. IP/C/W/308/Rev.1.
Source: http://docsonline.wto.org/DDFDocuments/t/IP/C/W308R1.doc

[43] WTO Document No. IP/C/W/278/Add.1
Source: http://docsonline.wto.org/DDFDocuments/t/ip/c/w278a1.doc and IP/C/W/231
Source: http://docsonline.wto.org/DDFDocuments/t/ip/c/w231.doc

[44] WTO Document No. IP/C/W/107/Rev.1.
Source: http://docsonline.wto.org/DDFDocuments/t/ip/c/w107R1.doc

[45] WTO Document No. IP/C/W/255.
Source: http://docsonline.wto.org/DDFDocuments/t/ip/c/w255.doc

[46] WTO Document No. IP/C/W/133/Rev.1.
Source: http://docsonline.wto.org/DDFDocuments/t/ip/c/w133R1.doc

[47] *"Summary of the responses to the checklist of questions",* WTO Document No. IP/C/W/253.
Source: http://docsonline.wto.org/DDFDocuments/t/ip/c/w253.doc

[48] World Bank (2001) *"Global Economic Prospects and the Developing Countries 2002: Making Trade Work for the World's Poor",* World Bank, Washington DC, pp. 143-4.
Source: http://www.worldbank.org/prospects/gep2002/full.htm

[49] An appellation of origin is the "geographical name of a country, region, or locality, which serves to designate a product originating therein, the quality and characteristics of which are due exclusively or essentially to the geographic environment, including natural and human factors", Article 2 of Lisbon Agreement for the Protection of Appellations of Origin.
Source: http://www.wipo.org/treaties/registration/lisbon/

[50] Blakeney, M. (2001) *"Geographical Indications and TRIPS",* QUNO Occasional Paper 8, Quaker United Nations Office, Geneva.
Source: http://www.geneva.quno.info/new/doc/OP8%20Blakeney.pdf

[51] *"Issues for discussion in the negotiations under TRIPS Article 23.4",* US submission to the TRIPS Council, 10 April 2002, WTO Document No. TN/IP/W/2.
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