
Appendix: Selected Individuals and Organizations Offering IPR-Related Information and Training Opportunities

Institute of International Agriculture, Michigan State University,
<http://www.ia.msu.edu/>

Center for the Application of Molecular Biology to International Agriculture (CAMBIA)
<http://www.cambia.org/>

International Biotechnology Service (IBS) of ISNAR
<http://www.cgiar.org/isnar/ibs.htm>

International Service for Acquisition of Agri-Biotech Applications (ISAAA)
<http://www.isaaa.org/>

Association of University Technology Managers (AUTM)
<http://www.autm.net/>

U.S. Patent and Trademark Office (PTO)
<http://www.uspto.gov/>

World Intellectual Property Organization (WIPO)
<http://www.wipo.org/>

International Union for the Protection of New Varieties of Plants (UPOV)
<http://www.upov.int/>

National Technology Transfer Center (NTTC)
<http://www.nttc.edu/>

Licensing Executive Society International Inc. (LESI)
<http://www.lesi.org/>

IPR Update

Protecting Traditional Knowledge Systems for Development

"Traditional knowledge systems are frameworks for continuing creativity and innovation in most fields of technology, ranging from traditional medicinal plants and agricultural practices, to music." - WIPO, 2001¹.

Introduction

Traditional Knowledge (TK²) systems are the essence of the social capital of the poor and the source of their survival strategies. Rooted in tradition, TK is also contemporary knowledge, defined by its inherently dynamic nature. It is constantly evolving as individual and community responses to the challenges posed by their environment.

Recent interactions between modern scientific knowledge and traditional knowledge systems have created tensions between the two streams of thought. In the tropical rainforests, local healers have been using the bark of the Bintangor tree to treat headaches and skin rashes for centuries. Along comes a scientist, to collect samples from the same bark, undertake vigorous laboratory tests and isolate a chemical to treat certain forms of cancer. Who should benefit from the discovery of the new drug?

Traditionally, local healers are not accustomed to procuring economic gains from their communal knowledge of medicinal plants. The scientist on the other hand, seeks a profit to recover the human and financial capital invested in the discovery of the new drug. Although both parties have derived their innovations from the same source, it is difficult to ascertain the extent to which the scientist's discovery was based upon the healer's prior knowledge of the medicinal properties of the Bintangor tree.

In 1992, the Convention on Biological Diversity (CBD) attempted to address these issues by acknowledging the value of indigenous knowledge and resources. It established a framework for providing access to genetic resources and a means for fair and equitable benefit sharing. Two years later, the WTO's Trade Related Intellectual Property Rights (TRIPS) Agreement came into force and created an international standard for minimum intellectual property rights (IPR) protection. By extending patent regimes to cover resources that are intangible in nature such as plant and genetic resources derived from TK, the TRIPS Agreement raised major environmental concerns.

Reports by the media and NGO community tend to present the TRIPS Agreement as a political endorsement of bio-piracy³, by supporting the scientist at the expense of the healer. They claim the two are ideologically opposed: traditional knowledge belongs to the community and IPRs to the individual. The proponents of IPRs claim that not only do they reward the owners of traditional knowledge, be they communities or individuals, but also provide a mechanism for integrating developing countries into the multilateral trading system, by way of their comparative advantage in bio-resources. Growing fears, fuelled by a lack of understanding of the full implications of

¹ WIPO Report on Fact Finding Missions on Intellectual Property Needs and Expectations of Traditional Knowledge Holders. Geneva, April 2001.

² Traditional, local and indigenous knowledge systems refer to knowledge derived from local communities. Some of the literature on the subject and UN bodies prefer the term 'TK', while others use 'IK'. These are equally applicable.

³ The unauthorized appropriation of traditional knowledge and genetic resources for commercial exploitation.

IPRs on traditional knowledge systems, have heightened political controversy, with views polarized for and against the protection of TK⁴.

IPR needs of traditional knowledge holders

In order to gain a clearer insight into the IPR needs and expectations of traditional knowledge holders, WIPO conducted nine Fact Finding Missions (FFMs) across the six continents between 1988-99. Hundreds of interviews were conducted to gather new perspectives on IPRs from local communities, NGOs, governments, civil society, academia, legal institutions and the private sector. The results were published in a Report in April 2001 that raised several issues.

The most glaring observation was that TK holders, local communities and government officials in developing countries have very little knowledge, understanding, or experience with formal IP systems. They tend to rely on customary laws and protocols governing access and benefit sharing. According to the Report, "indigenous peoples possess their own locally-specific systems of jurisprudence with respect to the classification of different types of knowledge, proper procedures for acquiring and sharing knowledge, and the rights and responsibilities which attach to possessing knowledge, all of which are embedded uniquely in each culture and its languages."

Traditional knowledge passes from one generation to the next as an oral tradition. It is not well documented, which poses great challenges as younger generations opt for modern lifestyles. Today traditions and languages are dying with the old custodians. There is an urgent need to document and preserve the knowledge that is held by elders and communities. The Report stresses that documentation is critical for the prevention of unauthorized acquisition of IPRs over TK. Documenting and publishing TK as searchable prior art can serve as defensive publications to refute false claims, as in the Turmeric case⁵.

The protection of TK could also help raise its profile in the development arena. The value of such knowledge is often overlooked by modern reductionist approaches to science. Unless a product is subject to clinical trials and scientific scrutiny, it is viewed as 'inferior', regardless of its potential value. According to WIPO's Report, a healer may not be able to describe the effects of his treatment on the body in molecular interactions, but bases his prescription upon generations of clinical trials undertaken by healers before him. As a result, traditional medicine and related practices are seldom prioritized in national development policies. Traditional knowledge and practices can help save lives, increase food security and incomes, if effectively harnessed for development.

Modern IP systems cannot respond to all these characteristics of traditional knowledge systems. At the same time, there is a need to distinguish between the IP system per se and its poor application in cases, where a patent should not have been granted. The Report reveals that "not all traditional knowledge is collective and not all IPRs are individualistic". Certain knowledge is held in the custody of particular groups or individuals within a community. IPR systems are broadly

⁴ For detailed arguments see Posey and Dutfield (1996) *Beyond Intellectual Property: Toward traditional resource rights for indigenous peoples and local communities*. IDRC, Ottawa.

⁵ In 1995, the US Patent Office granted a patent for Turmeric to be used to heal wounds. The Indian Council for Scientific and Industrial Research (CSIR) claimed that this was existing public knowledge (prior art). CSIR won the case by providing written documentation proving traditional wisdom, citing an ancient Sanskrit text and a 1953 Medical Journal. The patent was cancelled.

defined to include geographical indications, trade secrets and *sui-generis*⁶ forms of protection that could be applied for the benefit of entire communities. The Report recommends testing options for the collective acquisition, management and enforcement of IPRs by TK holders.

As a result of the limited interaction between informal and modern IP systems, TK holders and others have placed great expectations on IPRs as a tool to protect TK. The media and certain NGOs have raised these expectations to unrealistic heights. According to the Report, "much of traditional knowledge lies outside the scope of IP". An enormous wealth of TK is already in the public domain and hence cannot be patented, such as the use of the Bintangor tree bark to treat headaches and skin rashes. Moreover, "a patent on an invention derived from TK does not prevent the continued use of the TK by the relevant community". Farmers for example, will not be deprived of their traditional practices such as the informal exchange of seeds, as a result of IPRs.

The Report concludes that many of the problems encountered by TK holders are less "legal" than "operational" in application. Often a lack of know-how and financial resources conspire to prevent local communities from accessing the IP system. The costs involved in the acquisition, maintenance and enforcement of IPRs tend to be prohibitive, from the perspective of a local healer. New ways to reduce the transaction costs need to be explored. To help address these concerns, several innovative access and benefit sharing agreements such as MTAs (material transfer agreements) have been developed and adopted by governments to reward TK holders⁷.

Traditional knowledge enters the WTO

Several developing countries raised concerns on these issues in various WTO forums, such as the Committee on Trade and Environment (CTE). Some felt they were not adequately addressed in the past. The recent Doha Ministerial Conference issued a Declaration that included traditional knowledge in the WTO's work program for the first time:

*"We instruct the Council for TRIPS to examine the relationship between the TRIPS Agreement and the Convention on Biological Diversity, the protection of traditional knowledge and folklore, and other relevant new developments raised by Members"*⁸.

The Doha Declaration instructs the CTE to "give particular attention to" the TRIPS Agreement in its work program. This will enable member states to address their trade and environmental concerns arising from the enforcement of IPR regulations mandated by the Agreement.

Recent actions taken by governments in response to public health needs have created further controversy about IPRs. The government of South Africa for instance, declared a state of emergency in response to the country's HIV/AIDS epidemic. Selling medicines cheaply provided the poor with access to treatment, but also ran counter to the TRIPS Agreement, some argued. Hence, the Doha Ministerial issued a separate Declaration on the TRIPS Agreement and Public Health, allowing for implementation "in a manner supportive of WTO Members' right to protect

⁶ *Sui generis* (of its own kind: constituting a class alone) refers to methods of protection other than the use of a patent. These include Plant Breeders Rights and the UPOV Convention for the protection of new varieties of plants.

⁷ For example, the *Andean Pact* adopted by Bolivia, Colombia, Ecuador, Peru and Venezuela, empowers the national authority and local communities in each country, as the holders of traditional knowledge and resources, to grant prior informed consent in exchange for equitable returns.

⁸ The WTO Ministerial Declaration, Ministerial Conference, Fourth Session, Doha, 14 November 2001.

public health and to promote access to medicines for all". Countries were also granted the right to determine what constitutes a national emergency in relation to epidemics such as HIV/AIDS, malaria and tuberculosis.

In addition, to encourage the discovery of new drugs derived from TK and to reward its custodians, the Declaration pledged a commitment from developed countries to "provide incentives to their enterprises and institutions to promote and encourage technology transfer to least developed countries". This could help build up the research and development (R&D) capacity of national drug laboratories to undertake clinical trials on herbal treatments derived from TK. A partnership could develop between the local healers and scientists to share their knowledge of medicinal plants and subsequent economic gains derived from the end products.

WIPO responds to the fact finding missions

In response to the IPR needs and expectations raised by the Fact Finding Missions (FFMs), WIPO has set up an Intergovernmental Committee to examine the protection of traditional knowledge systems in more detail. In concrete terms, WIPO has incorporated the following activities in its current work program:

1. The development of information materials on options under existing IP systems for the protection of TK.
2. Practical information and training workshops on the IP system and the protection of TK (e.g. contracting procedures).
3. IP information, training and standards for the documentation of TK.
4. Practical studies of actual examples in which TK protection has been sought under the IP system with a focus on successes, failures and lessons learned.
5. Feasibility studies on the applicability of customary laws and protocols to TK.
6. Pilot project on collective acquisition, management and enforcement of IPRs in TK.

WIPO has begun to provide training to IP offices, governments, NGOs and communities at the grass roots level to increase understanding of the role of IPRs in the protection of traditional knowledge. Creating new standards for documentation has provided a framework to help manage IPR implications in the TK documentation process. This will enable national IP offices to integrate the TK documentation into their existing procedures for conducting prior art searches to examine applications for patents related to TK based inventions.

World Bank supports indigenous knowledge for development

The World Bank's Indigenous Knowledge (IK) Program has helped document and disseminate TK through its IK database of over 200 cases and IK Notes Newsletter, highlighting IK best practices. The objective of the IK Program is to mainstream a process that considers IK as a resource for development, primarily for the communities themselves and other local actors. Most of the information provided by the IK program has been in the public domain in terms of knowledge content. All the cases cited are published elsewhere and provide some form of protection against being claimed by somebody else.

The IK Program has helped integrate traditional knowledge systems into World Bank supported projects in Africa related to healthcare, agriculture and the environment. It has enhanced recognition of the potential value of IK for development, by supporting stakeholder workshops to

develop national strategies for the sustainable use of IK. The Program has partnered with organizations such as WIPO to promote the validation of IK. It recently brokered a partnership between the US National Institutes of Health and an African NGO called the Tanga AIDS Working Group, to test the scientific efficacy of herbal drugs used by local healers to treat HIV/AIDS patients of opportunistic infections.

Conservation and Sustainable Use of Medicinal Plants Project in Sri Lanka

In 1998, the Bank began to harness untapped (IK) potential for development through a GEF sponsored project on medicinal plants. The following activities were facilitated by the Ministry of Indigenous Medicine and IUCN Sri Lanka:

- In just over three years, the project has documented ancient medicinal knowledge in a community owned database and developed participatory approaches to conduct baseline socio-economic and ethno-botanical surveys.
- Promoted the in situ conservation and cultivation of medicinal plants in local home gardens in the five designated medicinal plants conservation areas (MPCAs).
- Mainstreamed IK through putting in place effective marketing techniques for herbal remedies derived from medicinal plants.
- Transcribed ancient palm leaf manuscripts that contain information on diseases and their diagnosis, as well as prescriptions into Sinhalese.
- Established a program to enable the bearers of traditional knowledge, community elders, to transfer their skills to selected acolytes.
- Created a legal and institutional framework for the protection of traditional knowledge, through the development of a National Biodiversity Strategy.

Conclusion

This paper has attempted to disentangle the different components of traditional knowledge systems, from the IPR puzzle. From this process, four major challenges emerge for the protection and sustainable utilization of TK:

1. Oral traditions are dying with older generations, hence the need for documentation;
2. Need IPRs for the protection of TK and to reward the custodians (communities);
3. Undermined by scientific community, hence the need for validation;
4. Under-utilized resource for development, hence the need for mainstreaming.

While IPRs have implications on various aspects of traditional knowledge systems, they do not provide a one stop solution to all the problems arising from their protection and use. They should be viewed as one part of a larger process. A more holistic approach is needed that depends on fostering dynamic partnerships between the custodians of TK, civil society, governments, donors and the private sector. Several initiatives have begun to broker a dialogue between different stakeholders to jointly explore IPRs as one of several tools available for the protection and sustainable utilization of traditional knowledge systems for development.