

# PROTECTION OF TRADITIONAL KNOWLEDGE AND GENETIC RESOURCES

## A Bottom-up Approach to Development

At a time when the wealth of nations lies increasingly in the knowledge which their peoples hold, legal protection is frequently being claimed for resources such as traditional knowledge and associated genetic resources. However, what do we mean by "traditional knowledge"? How should it be protected? How is it linked to genetic resources and other components of biodiversity? How should appropriate forms of protection be developed? This third in a series of articles on the work of the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (IGC) addresses some of these questions and summarizes current debates on traditional knowledge and associated genetic resources.

The questions above can be best approached and illustrated through an example: In South India the tribal medicinal knowledge of the Kani tribe led to the development of a sports drug named Jeevani. Jeevani is an anti-stress and anti-fatigue agent, based on the herbal medici-



Kani tribal member identifies components of the arogyapaacha plant

nal plant *arogyapaacha*. Indian scientists at the Tropical Botanic Garden and Research Institute (TBGRI) used the tribal know-how to develop the drug. The knowledge was di-

vulged by three tribal members, while the customary rights to the practice and transfer of certain traditional medicinal knowledge within the Kani tribe is held by tribal healers, known as *Plathis*. The scientists isolated 12 active compounds from *arogyapaacha*, developed the drug Jeevani, and filed two patent applications on the drug. The technology was then licensed to the Arya Vaidya Pharmacy, Ltd., an Indian pharmaceutical manufacturer pursuing the commercialization of Ayurvedic herbal formulations. A trust fund was established to share the benefits arising from the commercialization of the TK-based drug.

This example illustrates several intellectual property (IP) issues in the field of TK and genetic resources: What kind of legal protection should be given to the Kanis for their TK? How should benefit sharing be structured between the company that developed the product and the Kani tribe which conserved and cultivates the plant and held the knowledge about it? If the Arya Vaidya company had been located in another jurisdiction

should access to the genetic resource *arogyapaacha* have been subject to regulation? How should such access be regulated and what should be the role of the community and the state? What might be the role of the customary laws of the Kani?

Similar kinds of research and access to TK and associated genetic resources often occur across national boundaries. Thus questions like these are frequently raised in international discussions about the appropriate policy concerning research activities involving TK and genetic resources.

### Definitions and use of Terms

The term 'traditional knowledge' is generally used at two levels. In the broad sense TK includes both the *ideas* and the *expressions* of the ideas which were developed by indigenous and local communities in a traditional way. In the narrow sense, TK refers only to knowledge *as such*, that is only to the *ideas* and not to their *expression*. For example, the Kani know-how of using the *arogyapaacha* plant would be considered TK in the narrow sense, irrespective of whether it is expressed in a folksong, a ritual practice, or a written story. In the narrow sense TK therefore describes those elements that may be protected by IP rights which focus on the *use* of the knowledge, rather than the *expressions* of the knowledge. Some traditional knowledge touches simultaneously upon both these aspects, however this article will deal only with tradi-



tional knowledge in the narrow sense as well as the related genetic resources.

Those elements of TK which are most intensely debated are often linked to the use of biological diversity and its components, such as medicinal plants, traditional agricultural crops, animal breeds, extracted substances, etc. Such genetic and biological resources are linked to the knowledge and traditional practices through the utilization and conservation of the resource, which has often occurred over generations, and through their common use in modern scientific research (such as in the Kani case). In the example from India, the traditional know-how of the tribal members was linked to the use of a medicinal plant as well as the use of certain other organic compounds. In this context, the term "biological resources" means genetic resources, organisms, their parts, or any other biotic component of ecosystems of use or value. Genetic resources thus form one category of biological resources. Genetic resources are defined as any material of plant, animal, microbial or other origin which contains functional units of heredity and is of value. For example, the plant *arogyapaacha* is a genetic resource, whereas the 12 active molecules are biological resources but not genetic resources.

In the case of the Kani, these resources and certain TK elements were referred to in the patent application and in the benefit-sharing ar-

rangements based on the granted patent. The question then arises, what kind of protection should be available for the TK and what role should IP rights have in benefit-sharing arrangements for the genetic resources associated with TK?

TK in the narrow sense - knowledge such as traditional technical know-how, or traditional ecological, scientific or medical knowledge - is to be distinguished from expressions of folklore or traditional expressions of culture (TCEs). Distinct, but complementary legal tools can be used to protect these distinct elements, and this choice has been made in some cases. But the traditional linkages between these elements should be recognized by policymakers and respected as far as possible in the design and implementation of new legal mechanisms. For example, many handicrafts have a utilitarian function, which gives effect to a technical idea, but they also have important aesthetic aspects, which express a certain culture. In this vein, handicrafts may embody both TK in the narrow sense and a traditional cultural expression. This lack of a clear distinction about the application of different legal regimes to the same underlying subject matter is not new in IP law. For example, designs may be protected under the law of industrial property, the law of copyright, or both.

A fundamentally important aspect of TK is that it is "traditional" only to the extent that its creation and use

are part of the traditions of communities or nations. Traditional, therefore, does not necessarily mean that the knowledge is ancient. Traditional knowledge is being created every day, it is evolving as a response of individuals and communities to the challenges posed by their social environment. In its use, TK is also contemporary knowledge. This aspect is further justification for legal protection. It is not only desirable to develop a protection system that documents and preserves TK created in the past, which may be on the brink of disappearance, it is also important to envisage a system that contributes to the promotion and dissemination of innovations that are based on continuing use of tradition.

### ***What kind of legal protection for TK?***

Protection of TK should be primarily undertaken for the benefit of its holders. In our example this would be the Kani tribe and its members. It should respect their cultural and community values, and should be based on consultations with the tribe(s) concerned.

In past discussions a distinction has been made between two types of protection for TK: **positive** protection which describes the protection of TK through the recognition of rights in TK and **defensive** protection which refers to the safeguarding against illegitimate third party IP rights over TK. In most cases, in order to be ef-

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fective, TK protection would have to be practically feasible and easily accessible to the traditional communities in both these aspects of protection.

A comprehensive strategy for the protection of TK might have dimensions pertaining to the community, national, regional and international levels. The stronger the integration and coordination between these dimensions, the more likely the overall effectiveness. Many communities, countries and regional organizations are working to address these levels respectively. National laws are currently the prime mechanism for achieving practical benefits for TK protection. For example, the African Union, Brazil, Costa Rica, India, Peru, Portugal and Thailand have all adopted *sui generis* measures which address TK and associated genetic resources (*sui generis* measures are specialized measures aimed exclusively at addressing the characteristics of specific subject matter, such as TK and associated genetic resources). In addition, a number of regional organizations, such as in the South Pacific and in Africa, are working on defining the specific rights in TK and how they are administered. In cases such as the Kani example, various TK holders and other stakeholders in different countries have already found existing IP rights useful and their TK protection strategies focus on the IP system.



### *Agricultural Innovation*

The wealth and diversity of local knowledge systems surrounding traditional agriculture includes traditional knowledge about the uses of plants, plant conservation strategies, pest and disease management, environmental monitoring for ecological change, and traditional selection and breeding methods. For example, such methods allowed Dhularam Mondal, a small innovative farmer from India, to develop a new broad bean variety with larger pods than the previous varieties. Furthermore, the UN Food and Agriculture Organization (FAO) has documented that women cultivators of the Aguaruno Jivaro community in northern Peru identify and select the cassava cultivars on the basis of characteristics that show the greatest phenotypic variation. Panicle harvesting by Mende farmers in Sierra Leone has allowed them to select rice varieties of short, medium and long duration. The same FAO Report found that differences between Cuban and Mexican maize are linked to maize being prepared and eaten in different ways in the two countries, which has led farmers to select varieties for different properties in the two countries.

*Compiled from: "Farmer breeds a broad bean variety." Honey Bee Vol. 9 No. 1. Jan-March 1998; and FAO, The State of the World's Plant Genetic Resources for Food and Agriculture., FAO, 1997.*

The protection of TK is important for communities in all countries, particularly in developing and least developed countries. First, TK plays an important role in the economic and social organization of those countries, and placing value on such knowledge is a viable means of promoting a sense of national cohesion and identity. Second, developing and least developed countries are engaged in implementing international agreements that may affect the manner in which knowledge associated with the use of genetic resources is

protected and disseminated.<sup>1</sup> In the agricultural area existing instruments already recognize farmers' rights and international instruments that will provide for certain genetic resources in the agricultural sector to be managed through a multilateral system may soon enter into force.<sup>2</sup> The international instrument establishing this system will be the International Treaty on Plant Genetic Resources for Food and Agriculture.

<sup>1</sup> For example the Convention on Biological Diversity (CBD) and the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement).

<sup>2</sup> Relevant instruments in the agricultural sector include the International Treaty on Plant Genetic Resources for Food and Agriculture (2001) and the International Undertaking on Plant Genetic Resources (1983).

## Challenges Confronting TK Holders

TK holders are currently facing various difficulties. A serious problem is the reluctance of the younger generation to learn the "old ways." The rejection of traditions by the young and the encroachment of modern lifestyles often result in the decline of TK and practices. Either through acculturation or diffusion, many traditional practices are lost. Thus, a primary need is to document and preserve the knowledge that is held by elders and communities throughout the world. While such documentation raises important IP questions, which should be decided and managed by TK holders, documentation of TK in itself is an issue that goes beyond IP policy and cannot be fully addressed through IP mechanisms.

Another difficulty facing TK holders is the lack of respect and appreciation for such knowledge. For example, when a traditional healer provides a mixture of herbs to cure a malady, the healer may not describe the effects on the body as molecular interactions in the terms of modern biochemistry, but the healer bases his "prescription" upon generations of "clinical" trials undertaken by healers before him. Thus, sometimes the true understanding of the value of TK may be overlooked within a purely scientific approach to natural resource utilization and management.

Yet another problem confronting TK holders is the commercial exploitation of their knowledge by others, which raises the question of **legal protection** of TK. Cases involving natural products all bear evidence to



the value of TK in the modern economy. A lack of experience with existing formal systems, economic dependency, lack of a unified voice, and, in many cases, a lack of clear national policy concerning the utilization of TK, results in these populations often being placed at a decided disadvantage in using existing IP mechanisms. At the same time, the lack of clear rules protecting TK creates risks for companies, which prefer closing deals under well-established, reliable and enforceable rules.

For all these reasons, WIPO is undertaking extensive work on IP aspects pertaining to the protection of TK and access and benefit-sharing for associated genetic resources. Extensive documentation on this work can be found on the WIPO website ([www.wipo.int/globalissues](http://www.wipo.int/globalissues)). The immediate work ahead requires that the international dimension of the protection of TK and benefit-sharing for associated genetic resources be addressed, learning from existing national experiences. Only through the participation of communities and countries from all regions can this work go forward to produce effective and equitable outcomes that are acceptable to all stakeholders.

## Conclusion

Traditional knowledge is naturally cherished as an important part of the cultural heritage and historical identity of many local and indigenous communities, as well as many nations and regions with a shared cultural history. It is also increasingly recognized as a key element for the future well-being as well as the intellectual and cultural vitality of those traditional communities that have developed, nurtured, and passed knowledge on to their descendants, and whose way of life and cultural and legal values are rooted in their traditional knowledge heritage. The challenge for policymakers is to find ways of strengthening and nurturing the roots – cultural and legal – of traditional knowledge.

It has been argued that genetic resources, and the TK associated with using them in a sustainable manner, are a comparative advantage of those countries that are biodiversity-rich, enabling them to participate more effectively in global markets and thus rise above current levels of poverty and deprivation. If this is so, then protection of TK at the national and the international levels can be seen as a potentially powerful tool for advancing a bottom-up approach to development.

