

# *Study unit 4*

## *Case study: ethnobotanical knowledge*

### *Overview*

In this study unit you will be introduced to some of the issues relating to the protection of ethnobotanical knowledge. You will also be able to distinguish between protection against exploitation by industrial property, on the one hand, and protection of industrial property, on the other hand. In so doing you will be introduced to the relevant principles of patent law, trade secrets, transfer of technology, database protection, and compensatory liability.

### *Learning outcomes*

- After completion of this study unit, you should be able to —
- ☐ identify the issues relating to the protection of ethnobotanical knowledge
  - ☐ understand the protection against exploitation by industrial property offered by patent law
  - ☐ understand the protection of such knowledge by industrial property, with specific reference to patents, transfer of technology, trade secrets, database protection, and compensatory liability

### *Setting the scene*

The Policy Sciences Center has made a grant to the non-governmental organization Otro Futuro in Venezuela, to assist it in helping the Dhekuana Indians to develop an *Archive and Atlas*, and to protect their intellectual property rights. Those rights range from copyright for myths, stories, legends, and music to ethno-botanicals that can be patented. Until now, the Dhekuana perceive of the property in all these categories as being communally owned by 12 tribes inhabiting some 2 million square acres. The experiment involves establishing a community foundation in which the tribes would be represented on the board of directors and in which the property rights for copyright and patent could be vested.

It will appear that the protection of the ethnobotanical knowledge of indigenous peoples involves two aspects:

- against outsiders* ☐ protection *against* industrial property rights acquired by 'outsiders' as a result of an appropriation of traditional knowledge, and
- of own knowledge* ☐ protection *by* industrial property of the traditional knowledge of indigenous peoples for their benefit.

*Protection against exploitation of industrial property*

*two approaches*

As far as protection against exploitation of industrial property is concerned, two complementary approaches can be taken.

*notification requirement in  
patent law*

The first approach is to establish a notification requirement for patentability. For example, at the third session of the Standing Committee on the Law of Patents (SCP) of WIPO, the delegation of Colombia proposed the inclusion of a provision to this effect in the (then draft) Patent Law Treaty. The proposal stated that where it appears that an invention which forms the subject of a patent application is based on genetic resources which form part of a country's 'biological and genetic heritage', a copy of the contract affording access to the genetic resources in their country of origin should be filed (SCP/3/10). Unfortunately, the proposal did not meet with success: it was rejected for relating to a substantive requirement of patentability and so for not falling within the scope of the Treaty, which concerns itself with formal requirements (procedures and documentation) only. The prospects of a similar proposal succeeding at an international trade negotiations round are slim, given the strong opposition to such a requirement from pharmaceutical companies and the governments of countries with strong pharmaceutical industries.

*searchable prior art*

The second approach is to prevent the unauthorized (improper) acquisition of industrial property rights (especially, patents) over traditional knowledge by documenting and publishing traditional knowledge as searchable prior art, should the holders of the traditional knowledge concerned want this. Once such knowledge becomes part of the prior art, that mere fact destroys the novelty of any invention based on such knowledge. Even if a

*revocation of patent*

patent is obtained, it may be revoked on this ground. This procedure may involve an application launched by the holders concerned (which would involve substantial legal costs), or by a rival pharmaceutical company who wants to exploit the knowledge for its own gain (and at its own cost).

### *Protection for exploitation of industrial property*

*secure revenue*

Economically, the main aim of this aspect of protection is to secure revenue for indigenous peoples through the exploitation of their ethno-botanical knowledge. Again, there are different levels on which this aspect can be approached.

### *Patents*

*problem of testing costs*

Holders of traditional knowledge can be given access to the industrial property system, to enable them to obtain patents (or utility models or 'petty patents' where provision is made for these) where appropriate. One basic problem with doing so is that a patent protects active ingredients that have been isolated and tested. Such isolation and testing cost hundreds of millions of dollars and so is only possible for multi-national pharmaceutical companies, not for the developing countries, or certainly not for their indigenous peoples. A further problem is that it may not be possible to obtain a patent because the novelty of the invention may have been destroyed by prior use of the invention by the local community itself. Whether such prior use would actually destroy the novelty of the invention for which a patent is sought, will depend on the patent law of the country in which protection is sought. Under the Patents Act 1977 in the United Kingdom, for example, use founds an attack on novelty if it effects a public release equivalent to publication — the question is whether a skilled worker, by observation or analysis, could discover and reproduce the invention (*Stahlwerk Becker's Patent* (1919) 36 RPC 13 (HL)).

*novelty destroyed*

### *Transfer of technology*

*organized body of knowledge*

A variety of transfer of technology approaches can be considered. These approaches assume for their effective

operation an organized body of knowledge, and an identifiable entity to administer such transfer.

*state or NGO?*

One such approach is illustrated by the contract signed in 1991 between Merck & Co and the Costa Rica's Instituto Nacional de Biodiversidad (INBio), a non-profit organization (see 'Setting the scene' in Study Unit 5). Of course, an obvious problem with this approach is that if the royalties are paid to an official body, and not to an NGO or private corporation, they may disappear into the general state revenue account and may not 'trickle down' to the relevant communities or individuals.

*Trade secrets*

*licensing*

An alternative approach relies on the law relating to the protection of trade secrets: the trade secret is disclosed (licensed) to someone in exchange, amongst other things, for an undertaking of confidentiality, and remuneration (usually, a royalty).

*Venezuela*

The Policy Sciences Center is experimenting with a trade secret approach for communities to use so that they can derive revenue from ethnobotanical knowledge. The Center has made a grant to the non-governmental organization Otro Futuro in Venezuela, to assist it in helping the Dhekuana Indians to develop an *Archive and Atlas*, and to protect their intellectual property rights. Those rights range from copyright for myths, stories, legends, and music to ethno-botanicals that can be patented. The problem is that up to this point in history the Dhekuana perceive of the property in all these categories as being communally owned by 12 tribes inhabiting some 2 million square acres. The experiment involves establishing a community foundation in which the tribes would be represented on the board of directors and in which the property rights for copyright and patent could be vested. To protect ethnobotanical knowledge, it would be treated as a trade secret by the community foundation not to be disclosed to a pharmaceutical company or others unless such 'outsider' agreed to pay royalties to the foundation.

This approach is not free from pitfalls, either.

Trade secret protection usually depends on the legal rules of

*national protection*

each country, and international attempts at harmonization have not yielded much. The TRIPS Agreement, for example, simply states that '[n]atural and legal persons shall have the possibility of preventing information lawfully within their control from being disclosed to, acquired by, or used by others without their consent in a manner contrary to honest commercial practices' (article 39.2). The protected information should be secret in the sense that it is not, as a body or in the precise configuration and assembly of its components, generally known among or readily accessible to persons within the circles that normally deal with the kind of information in question; has commercial value because it is secret; and has been subject to reasonable steps under the circumstances, by the person lawfully in control of the information, to keep it secret. One problem with ethno-botanical knowledge may be that often the steps to keep the information secret may not be sufficient under the existing common or civil law rules – secrecy often flows only from the fact that few people have access to the information concerned, based on customary law and practices (Daniel J Gervais 'Traditional knowledge: a challenge to the international intellectual property system', paper presented to the Ninth Annual Conference in International Intellectual Property Law and Policy, Fordham University School of Law, 19–20 April 2001, New York).

*secrecy*

*WIPO Model  
Provisions*

The WIPO Model Provisions on Protection Against Unfair Competition do not take the matter much further. A proposal relating to unfair competition in respect of secret information simply states that '[a]ny act or practice, in the course of industrial or commercial activities, that results in the disclosure, acquisition or use by others of secret information without the consent of the person lawfully in control of that information ... and in a manner contrary to honest commercial practices shall constitute an act of unfair competition' (article 6.1). The examples of such unfair competition include secret information acquired in breach of contract, or of confidence (article 6.2). The same conditions as in the TRIPS Agreement have to be satisfied in order for information to qualify as 'secret' (art 6.3). In determining whether reasonable steps have been taken to keep the information secret, account should be taken of the amount of effort and money spent by the rightful holder on developing the secret information, the value of that information to him or her and to his or her competitors, the extent of the measures taken by the rightful holder to keep the information secret, and the ease or difficulty with which it could be lawfully acquired by

others (note 6.20 on article 6). Also, the secret information has to be identifiable (for example, in documents, or through storage in a database).

*strengthen rules*

So to protect ethnobotanical knowledge not only in the country of origin but also in foreign countries, the legal rules relating to trade secret protection may have to be reviewed and strengthened internationally.

### *Database protection*

*non-original compilations  
of data*

The fact that the secret information has to be identifiable (in this context, usually in a database such as the *Archive and Atlas* of the Dhekuana Indians) raises a further issue – the protection of non-original compilations of data. Essentially, two main approaches to such protection can be discerned.

*Strong sui generis protection*

The first approach grants the maker of the database strong sui generis intellectual property protection in the form of exclusive rights. For example, in terms of the European Database Directive (1996 OJ (L 77)), the maker of a database obtains an exclusive ‘right to prevent extraction and/or reutilization of the whole or of a substantial part ... of the contents of that database’ (article 7(1)). This approach usually results in a rights regime of almost unlimited duration, subject to few, if any, public policy limitations. For this reason it has been argued persuasively that this type of protection jeopardizes basic research, eliminates competition in the markets for value-added products and services, and converts existing barriers to entry into insuperable legal barriers to entry (Reichman and Samuelson, 1997). Economic efficiency, in contrast, demands very low prices for such use and favors minimum incentives to provide the needed investment and services.

*weak IPR*

*misappropriation model*

The second approach favors a weak intellectual property right to overcome the risk of market failure without creating legal barriers to entry. A modest adoption of this approach calls for a misappropriation model based on simple unfair competition principles. Courts could use market-oriented factors to determine whether there has been an ‘unfair extraction’ from a database. Useful factors include the extent of the data appropriation by the user; the nature of the data appropriated; the purpose for which the user appropriated the data; the

degree of investment initially required to bring the data into being; the degree of dependence, or independence, of the user's own development effort and how substantial the user's own investment in such effort has been; the degree of similarity between the contents and of the database and a product developed by the user; the proximity or remoteness of the markets in which the database maker and the user are operating; and how quickly the user was able to come to the market with his or her own product as compared with the time required to develop the original database (JH Reichman & Pamela Samuelson 'Intellectual property rights in data?' (1997) 50 *Vanderbilt Law Review* 51) Obviously, any such protection has to be balanced with limitations and exceptions favouring science and education.

*developing countries*

Of these two approaches, the second is obviously of more benefit to developing countries. While it allows makers of databases to be protected against the risk of market failure, it does not create real barriers to market entry at the expense of the scientific and educational sectors.

### *Compensatory liability*

*3<sup>rd</sup> IP paradigm*

In a different context, Professor JH Reichman ('Legal hybrids between the patent and copyright paradigms' (1994) 94 *Columbia Law Review* 2432) has suggested a 'third intellectual property paradigm', loosely derived from classical trade secret law and from antitrust principles applicable to two-party transfers of unpatented industrial know-how. The proposed regime

'... aims to avoid market failure without introducing the market distortions characteristic of intellectual property rights and without forfeiting the pro-competitive social benefits that result from trade secret laws under optimum conditions. It solves the free-rider problem facing growing numbers of investors in applied know-how by directly linking the prospects for short-term returns on investment to the stipulation of a standard, multi-party set of default rules applicable to eligible forms of innovation.'

*Italian Copyright Law*

The proposed 'compensatory liability' regime is inspired by the Italian neighboring right that protects engineering projects. In terms of article 99 of the Italian Copyright Law of 1941, authors

of engineering projects, or other analogous productions, who contribute novel (but not obvious) solutions to technical problems are entitled to a reasonable royalty from third parties who commercially exploit their technical contributions without authorization. This right to 'equitable compensation' subsists for twenty years from registration. An appropriate notice must appear of copies of the plans.

*developing countries*

Professor Reichman ('Of green tulips and legal kudzu: repackaging rights in subpatentable invention' (2000) 53 *Vanderbilt Law Review* 1743) has argued that this regime could solve some pressing needs of developing countries:

'As with small-scale innovations, the goal is to reward both first comers (in this case, the relevant indigenous community), and second comers (those who build on the community's cultural heritage), without impeding access to the public domain or the flow of new products. With small amounts of tinkering, a compensatory liability regime could be adapted to encourage use of traditional knowledge without denying the relevant indigenous communities the right to a fair share of the proceeds.'

*extend to ethnobotanical knowledge*

This regime could best be extended to ethno-botanical knowledge. Legislation can allow 'second comers' commercially to exploit such knowledge without prior authorization, subject to an obligation to pay a reasonable royalty to a designated person or institution. At international level, the legal framework for this regime can be established either by an express provision in a future trade instrument, or by incorporation within article 10<sup>bis</sup> of the Paris Convention.

*Conclusion*

You should now be able to identify the issues relating to the protection of ethnobotanical knowledge. You should also be able to understand the protection against exploitation by industrial property offered by patent law, and the protection of such knowledge by industrial property, with specific reference to patents, transfer of technology, trade secrets, database protection, and compensatory liability.