World Patent Information 33 (2011) 58–66

Contents lists available at ScienceDirect

World Patent Information

journal homepage: www.elsevier.com/locate/worpatin

Traditional knowledge and the patent system: Two worlds apart?

Claudia Finetti *

Dragotti & Associati S.r.l., 6 Via Marina, 20121 Milan, Italy

ARTICLE INFO

Keywords:
TK, traditional knowledge
Indigenous Knowledge
Indigenous people
Biopiracy
CBD, biological diversity
PIC, prior informed consent
Registers
Databases
TKDL, Digital Library
China TCM, Traditional Chinese Medicine
KTKP, Korean portal

ABSTRACT

Traditional knowledge is a very broad definition which embraces technical concepts about a local environment, wherein said knowledge derives from the long-standing traditions and practices of certain regional, indigenous, or local communities. These technical concepts, which are intrinsically connected with the spiritual meanings and beliefs of the communities which had developed them, are the way indigenous people have in order to survive in the surrounding environment. The increasing awareness of the importance of this kind of knowledge brought about the necessity of the definition, classification and legal protection of traditional knowledge. As a consequence, after giving a brief overview of the main legal basis developed in the attempt at the protection of traditional knowledge, this paper deals with the problems associated with the codification in registers and databases, and gives some remarks about the Indian, Korean and Chinese traditional knowledge databases. Finally, a case study on a chemical patent search approached from a traditional knowledge point of view is presented.

1. Introduction

1.1. The meaning of "Traditional Knowledge"

Traditional knowledge (TK) is a very broad definition, which embraces the whole of the culture of the people living in an indigenous or local community. Said culture is a mixture between the technical concepts derived from the long-standing traditions, the practices carried out in order to survive in a specific local environment and the spiritual meanings and beliefs of the communities [1].

The TK includes both codified traditional knowledge and orally transmitted information. In such a context, the so-called Indigenous Knowledge (IK) can be referred to as the knowledge that is known only in a specific group of indigenous people, mostly orally transmitted, with respect to the TK that is of public domain (codified) [2].

Between other observations about the local environment, the TK includes the information about genetic resources, as long as it deals with the growing and the use of trees and plants for nourishment and illness treatments, and the animal breeds. TK, and in particular IK, embraces also the information about the weather forecast. For example, Moken indigenous, a coastal group of people of Thailand, saved themselves from tsunami in 2004, because they recognised that tsunami was coming through the observations of the particular movements of water [3].

It has to be noted that the term "traditional" does not mean that this kind of knowledge is old, but that it is based on the traditions, which have been transmitted through generations. Thus, the term "traditional" relates to the way the knowledge has been created, preserved and disseminated and it is not connected with the nature of the knowledge itself.

As long as the TK represents the adaptation to the surrounding environment, changes of the environments require that indigenous people find out new solutions. In other words, innovation is necessary in the TK and, hence, TK is always on development, it is not a static knowledge.

In view of the above, indigenous people prefer to avoid the term "traditional" in the definition of their knowledge.

Another important feature of TK is that this kind of knowledge is mainly a collective knowledge, and, as a consequence, it is a collective property of indigenous people. Nevertheless, cases of individual property can be found [2].

The World Intellectual Property Organization (WIPO), which actively works in order find solutions to protect TK, refers to the TK as to the "tradition-based literary, artistic or scientific works; inventions; scientific discoveries; design; marks, names and symbols; undisclosed information; and all other tradition-based innovations and creations, resulting from intellectual activity in the industrial, scientific, literary or artistic fields" [4].

Although there is no general accepted definition yet, the above cited WIPO's definition of TKis the most widely recognised.

* Present address: Barzanò & Zanardo S.p.A., 10 Via Borgonuovo, 20121 Milan, Italy. Tel.: +39 02 626131; fax: +39 02 6598859.
E-mail addresses: c.finetti@barzano-zanardo.com, c.finetti@barzano-zanardo.it.

0172-2190/$ - see front matter © 2010 Elsevier Ltd. All rights reserved.
doi:10.1016/j.wpi.2010.03.005

1.2. The biopiracy question

Biopiracy is a "political" definition given to the behaviour of some corporations, belonging both to the developed countries and to the TK holders countries, which commercially exploit the information got by TK, as the biological material or the specific knowledge about a topic, without any compensatory benefit to the stakeholder of such a knowledge. Sometimes, the TK has been duplicated as such, in patents [2,5].

Well-known intellectual property related cases of biopiracy in the "traditional medicine" field, are the case of the use of turmeric in wounds healing and the use of neem extract as a plant fungicide [6].

Turmeric, an herbaceous perennial plant of the ginger family which is used as a spice in Indian cooking, has been utilised for centuries to heal wounds and rashes. Despite this ancient knowledge, in 1995 two expatriate Indians at the University of Mississippi Medical Centre were granted the US patent no. 5401504 on use of turmeric in wound healing. After a re-examination requested by the Council of Scientific and Industrial Research (CSIR) of India and supported with ancient Sanskrit text and a paper published in 1953 in the Journal of the Indian Medical Association, the patent has been cancelled in 1997 by USPTO.

In the case of neem, a native tree of India, whose extract can be used against hundreds of pests and fungal diseases that attack food crops, the European patent no. EP436257 has been granted in 1994, claiming a method for controlling fungi on plants by the aid of hydrophobic extracted neem oil. In 2000, the European Patent Office (EPO) revoked the patent, after the opposition filed by a group of international NGOs and representatives of Indian farmers, as it had been demonstrated, through oral testimony, that the fungicidal effect of extracts of neem seeds had been known and used for centuries in Indian agriculture to protect crops [7].

In the above cited cases, the patents were granted by lack of good documentation and they were cancelled once the pertinent documents arose. Thus, there is a strong need, which is recognised by all parties and in particular by the main patent offices of the world, to have the tools in order to make a defensive protection of TK, for its preservation and equitable use. Due to the various facets of TK, different forms of intellectual property should be envisaged to protect such a kind of knowledge.

2. Attempts to protect traditional knowledge: legal aspects

2.1. Patents and traditional knowledge: conflicts

New inventions can be conceived as an improvement of some aspects of the TK, which is used as prior art, e.g.: a method to characterize an active principle in a plant can be developed starting from the observation of a particular use in the TK of the plant containing said active principle. Such inventions will not be a duplicate of TK, i.e. they will not have a "biopiracy" claim, but they will be derived. In this context, the inventions derived from TK will have a chance to be new, inventive and industrially applicable, i.e. they could be patentable. Anyway, in the patent system, no compensatory benefits are provided for the owners of TK [8].

The patent legal conflicts arise when the patent system come into contact with the TK as such [1,9].

In first instance, TK is collectively held and it is difficult to assign its property, wherein the patent system identify the ownership of the patent; then in most cases, TK deals with an ancient knowledge which does not possesses the aspects of innovation required and boosted by the intellectual property. More, patents provide for a time limited protection, wherein TK is a secular knowledge.

In the end, the novelty requirement seems to be hard to comply with, also if this particular points can be dealt with in different ways in the various countries.

For example, in the United States patent law, the non-written disclosures, such as the oral knowledge or the use outside United States of America (USA), are not considered prior art for the establishment of the novelty of the invention. In fact, the article of the United States patent law which sets the novelty requirement, i.e. 35 U.S.C. section 102 (a), cites that a patent can not be obtained if the matter it relates to, was *known or used by others in USA*, or patented or described in a *printed* publication in USA or in a foreign country [10]. As the most of TK is an oral disclosure or it is codified in ancient languages, the novelty requirement for inventions identical to TK seems easier to fulfil in USA, than, for example, in Europe. In fact, in the European Patent Convention the article 54 (2), which deals with the novelty requirement, states that "the state of the art shall be held to comprise everything made available to the public by means of a *written or oral* description, by use, or in any other way, before the date of filing of the European patent application" [11].

According to the controversial aspects above outlined, the patent system seems not to be the right solution in the attempt to protect traditional knowledge. The consciousness of the economic, social (human rights) and cultural aspects involved in the protection and preservation of TK led to the need of the definition of some legal basis for the protection of TK.

2.2. Aspects about the legal basis to protect TK

2.2.1. The United Nations Declaration on the Rights of Indigenous People

The United Nations Declaration on the Rights of Indigenous People was adopted by the United States Nations General Assembly during its 62nd session on September 13, 2007 [12].

According to the declaration, indigenous people are entitled to the recognition of the full ownership, control and protection of their culture and intellectual property. In particular, article 31 states that indigenous people have the right to special measures to control, develop and protect their sciences, technologies and cultural manifestations, including human and other genetic resources, seeds, medicines, knowledge of the properties of fauna and flora, oral traditions, literatures, designs and visual and performing arts [12].

2.2.2. The WTO–TRIPS and the protection of TK

The Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS) sets down the minimum standards for many forms of intellectual property (IP) regulation [13]. It contains requirements that nations' laws must meet for intellectual property and it specifies the enforcement procedures, remedies, and dispute resolution procedures [5].

Article 27 of TRIPS deals with the patentable subject matter and Section 1 states that patents have to be available *for any inventions*, whether products or processes, *in all fields of technology*, provided that said inventions are new, inventive and capable of industrial application. Moreover, Section 3 defines that plants and animals other than micro-organism, and essential biological processes for the production of plants or animals other than non-biological and microbiological processes, may be excluded from patentability, but a sui generis system should be envisaged in order to protect plant varieties. In this context, a sui generi system consists of a set of nationally recognised laws and ways of extending plant variety protection other than through patents [1,7].

The use of TK for the purification or characterization of active drugs and/or the development or the modification of a molecule, i.e. the inventions TK derived, lays in the article 27 of TRIPs. As a