PATENT LAW AND THE PROTECTION OF TRADITIONAL KNOWLEDGE

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ABSTRACT

Legal protection of traditional knowledge associated to genetic resources is an issue that garnered the attention of the international community more than two decades ago. There is still a lot of work to do in order to identify an adequate system of regulation that will protect traditional knowledge, while at the same time satisfying the interests of national policy and the international community. The purpose of this paper is to analyze if the patent law regime is a suitable system to protect traditional knowledge. The idea is as follows. The first step is to consider the opinion of indigenous and local communities, in order to identify their interest in protecting their traditional knowledge under the patent regime and conciliate the Western cosmovision with their principles and values. Second, it is to adjust the concept of the legal standards to the national reality and the interests of the communities. Consequently, with the right approach, national governments can make it possible to traditional knowledge to comply with the TRIPS minimum requirements of patentability in order to get an effective protection.

Keywords: Patent, traditional knowledge, traditional cultural expressions, expressions of folklore

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I. Introduction

Legal protection of traditional knowledge associated to genetic resources is an issue that garnered the attention of the international community more than two decades ago.[1] Nevertheless, despite its interest in regulating this topic, the international community has not been able to create an effective mechanism to protect traditional knowledge in all their dimensions. Some proposals have been made, and many countries have developed domestic law related to this topic. Nonetheless, there is still a lot of work to do in order to identify an adequate system of regulation that will protect traditional knowledge, while at the same time satisfying the interests of national policy and the international community.

The purpose of this paper is to analyze if the patent law regime is a suitable system to protect traditional knowledge. Consequently, we will define the different approaches for traditional knowledge protection in order to get into the study of patent law.

II. Traditional Knowledge Protection

Protecting traditional knowledge and the associated genetic resources is not an easy task because of the nature and characteristics of traditional knowledge. Traditional knowledge can be understood as a form of "knowledge which is developed, sustained and passed on within a traditional community, and is passed between generations, sometimes through specific customary systems of knowledge transmission. A community might see TK as part of their cultural or spiritual identity. So it is the relationship with the community that makes it 'traditional."[2]

After analyzing the dimensions of traditional knowledge, the World Intellectual Property Organization (WIPO) has decided that for purposes of legal protection, it is not convenient to state a definition of traditional knowledge. Instead, WIPO has suggested that for regulatory purposes, the distinctive characteristics of traditional knowledge should be established. Consequently, Article 3 of the Draft Provisions for Traditional Knowledge Protection reads:

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[1] *See* World Intellectual Property Office [WIPO], *Elements of a Sui Generis System for the Protection of Traditional Knowledge*, ¶ 4, WIPO/GRTKF/IC/3/8 (Mar. 29, 2002), *available at* http://www.wipo.int/edocs/mdocs/tk/en/wipo_grtkf_ic_3/wipo_grtkf_ic_3_8.pdf. The approval of the WIPO/UNESCO Model Provisions for National Laws on the Protection of Expressions of Folklore against Illicit Exploitation and other Prejudicial Actions, of 1982, by a Committee of Experts, and the establishment of the Convention on Biological Diversity, of 1992, are two major landmarks of the debate on the protection of traditional knowledge.

[2] *See* WIPO, *Intellectual Property and Traditional Knowledge*, at 6 *available at* http://www.wipo.int/export/sites/www/freepublications/en/tk/920/wipo_pub_920.pdf.

> 1. These principles concern protection of traditional knowledge against misappropriation and misuse beyond its traditional context, and should not be interpreted as limiting or seeking externally to define the diverse and holistic conceptions of knowledge within the traditional context. These principles should be interpreted and applied in the light of the dynamic and evolving nature of traditional knowledge and the nature of traditional knowledge systems as frameworks of ongoing innovation.
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> 2. For the purpose of these principles only, the term "traditional knowledge" refers to the content or substance of knowledge resulting from intellectual activity in a traditional context, and includes the know-how, skills, innovations, practices and learning that form part of traditional knowledge systems, and knowledge embodying traditional lifestyles of indigenous and local communities, or contained in codified knowledge systems passed between generations. It is not limited to any specific technical field, and may include agricultural, environmental and medicinal knowledge, and knowledge associated with genetic resources.[3]

These provisions have two main objectives, first to state the nature of traditional knowledge and second to define the scope of protectable subject matter. In that way, the provisions highlight the holistic, dynamic, and traditional characteristics of traditional knowledge, but at the same time it states that the protection of traditional knowledge against misappropriation and misuse can only be used beyond the traditional context. This means that any constraint related to traditional knowledge management can be applied only to third parties and not to traditional knowledge holders, who are authorized to manage their knowledge in the traditional way.

In addition, WIPO uses the term traditional knowledge to refer to all traditional knowledge categories, which could include "agricultural knowledge; scientific knowledge; technical knowledge; ecological knowledge; medicinal knowledge, including related medicines and remedies; biodiversity-related knowledge; 'expressions of folklore' in the form of music, dance, song, handicrafts, designs, stories and artwork; elements of languages, such as names, geographical indications and symbols; and

[3] *See* WIPO, *Revised Draft Provisions for the Protection of Traditional Knowledge*, at 21 (Article 3), *available at* http://www.wipo.int/export/sites/www/tk/en/consultations/draft_provisions/pdf/draft-provisions-booklet-tk.pdf.

movable cultural properties."[4] For the purposes of this draft, it does not include traditional cultural expressions (TCE) or expressions of folklore (EoF) as subject matter of protection. In this respect, the second paragraph clarifies that these provisions cover traditional knowledge as such. This means that they would not apply to TCEs/EoF, which are treated in complementary and parallel provisions (document WIPO/GRTKF/IC/8/4). In its general structure, but not its content, the paragraph is modeled on Article 2(1) of the Berne Convention which delineates the scope of subject matter covered by that Convention by first providing a general description and then an illustrative list of elements that would fall within its scope. In following a similar approach, this paragraph does not seek to define the term absolutely. A single, exhaustive definition might not be appropriate in light of the diverse and dynamic nature of TK, and the differences in existing national laws on TK.[5]

Doctor Nuno Carvalho introduces an interesting classification in this regard: traditional knowledge stricto sensu and traditional knowledge lato sensu. Traditional knowledge stricto sensu "consists of knowledge itself, that is, ideas developed by traditional communities and indigenous peoples, in a traditional and informal way, as a response to the needs imposed by their physical and cultural environments and that serve as means of cultural identification." [6] On the other hand, traditional knowledge lato sensu encompasses expressions of traditional culture or expressions of folklore.[7] This approach facilitates the treatment of ideas and expression within the realm of legal regulation in order to properly address both topics. As a result, for the purposes of this paper, we will only focus on the protection of traditional knowledge stricto sensu (traditional knowledge).

Protection of traditional knowledge and genetic resources is a topic that involves policy and intellectual property issues. Because of the nature and characteristics of traditional knowledge, policy issues address a broad spectrum of matters that involve a variety of domestic and international concerns. Nevertheless, intellectual property issues can be summarized in two key ways - defensive protection and positive protection.[8]

Defensive protection addresses any kind of mechanism developed to prevent third parties that are not considered traditional knowledge holders

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[4] *See* WIPO, *Intellectual Property Needs and Expectations of Traditional Knowledge Holders*, at 25, *available at* http://www.wipo.int/tk/en//tk/ffm/report/final/pdf/part1.pdf.

[5] *See* WIPO, *supra* note 3, at 22.

[6] Nuno Pires de Carvalho, *From the Sahama's Hut to the Patent Office: A Road under Construction*, *in* BIODIVERSITY AND THE LAW 243 (Charles McManis ed., 2007).

[7] *See id.*

[8] *See* WIPO, Traditional Knowledge, http://www.wipo.int/tk/en/tk/ (last visited Nov. 22, 2012).

from obtaining intellectual property rights over traditional knowledge.[9] Defensive protection has mainly focused on the patent law system. The main objective is to prevent the acquisition of patent rights over traditional knowledge through the use of traditional knowledge as prior art. In this respect, defensive protection aims at ensuring that existing TK is not patented by third parties – ideally, by ensuring that relevant TK is taken fully into account when a patent is examined for its novelty and inventiveness. Normally, a claimed invention in a patent application is assessed against the so-called "prior art" – the defined body of knowledge that is considered relevant to the validity of a patent. For example, if TK has been published in a journal before the applicable date of a patent application, it is part of the relevant prior art, and the application cannot validly claim that TK as an invention – the invention would not be considered novel. In recent years, concern has been expressed that TK should be given greater attention as relevant prior art, so that patents are less likely to cover existing publicly disclosed TK.[10]

Positive protection is oriented to the creation of a system that gives traditional knowledge holders rights over traditional knowledge in order to empower them and allow them to take action against misuse or unauthorized exploitation of traditional knowledge.[11] This approach also gives traditional knowledge holders an incentive to promote and protect traditional knowledge. Thus, positive protection uses legal mechanisms to ensure the protection of traditional knowledge. In this respect, The options for positive protection include existing IP laws and legal systems (including the law of unfair competition), extended or adapted IP rights specifically focused on TK (sui generis aspects of IP laws), and new, stand-alone sui generis systems which give rights in TK as such. Other non-IP options can form part of the overall menu, including trade practices and labeling laws, the law of civil liability, the use of contracts, customary and indigenous laws and protocols, regulation of access to genetic resources and associated TK, and remedies based on such torts as unjust enrichment, rights of publicity, and blasphemy.[12]

Defensive protection and positive protection of traditional knowledge are not mutually exclusive. On the contrary, they are complementary approaches that should be developed in a coordinated framework, because one is oriented to avoid misappropriation and to block the acquisition of illegitimate intellectual property rights (defensive protection), and the other

[9] *See* Nuno Pires de Carvalho, *supra* note 6, at 247. *Also see* WIPO, *supra* note 2, at 26.
[10] *See* WIPO, *supra* note 2, at 26.
[11] *See id*. at 12.
[12] *See id*. at 17.

looks for the prevention of unauthorized use (positive protection). Therefore, they should be considered as balancing elements that are crucial for the achievement of effective protection of traditional knowledge. This posture also responds that the nature of traditional knowledge is so diverse that it does not have a definite form of protection. Traditional knowledge protection must allow an array of options and combinations that can be adapted by each nation according to its needs and the specific characteristics of its traditional knowledge.

The protection of TK has shown that no single template or comprehensive "one-size-fits-all" solution is likely to suit all the national priorities and legal environments, let alone the needs of traditional communities in all countries. Instead, effective protection may be found in a coordinated "menu" of different options for protection. The key is to provide TK holders with an appropriate choice of forms of protection, to empower them to assess their interests and choose their own directions for the protection and use of their TK, and to ensure there is adequate capacity to carry through protection strategies. The way in which a protection system is shaped and defined will depend to a large extent on the objectives it is intended to serve. Protection of TK, like protection of IP in general, is not undertaken as an end in itself, but as a means to broader policy goals. The kind of objectives that TK protection is intended to serve include:[13]

- Recognition of value and promotion of respect for traditional knowledge systems
- Responsiveness to the actual needs of holders of TK
- Repression of misappropriation of TK and other unfair and inequitable uses
- Protection of tradition-based creativity and innovation
- Support of TK systems and empowerment of TK holders
- Promotion of equitable benefit-sharing from use of TK
- Promotion of the use of TK for a bottom-up approach to development

III. Protection of Traditional Knowledge and Genetic Resources under Existing Intellectual Property Regimes - Patent Law

The policy debate over traditional knowledge protection has cataloged the existing intellectual property rights regimes as inconsistent and contradictory to traditional knowledge. The unique nature of traditional knowledge makes it difficult for existing intellectual property regimes to totally satisfy the expectations of traditional knowledge holders. Thus, some sectors are skeptical about the real purposes and goals of intellectual

[13] *Id*. at 16.

property regimes.[14] The main reason for this skepticism is based on the different origins of traditional knowledge and intellectual property rights, and the interests behind them.

In the growing international debate over the legal protection of traditional knowledge, one frequently hears the view expressed that the traditional knowledge of indigenous peoples and local communities does not readily fit into the existing intellectual property regimes of the industrialized world, that these regimes basically promote the interests of the industrialized world and encourage what has come to be called (and vilified as) "biopiracy."[15]

Nevertheless, experience has shown the contrary and demonstrated that existing intellectual property regimes can legally protect traditional knowledge and genetic resources from unauthorized use and misappropriation. According to WIPO, "existing IP laws have been successfully used to protect against some forms of misuse and misappropriation of TK, including through the laws of patents, trademarks, geographical indications, industrial designs, and trade secrets."[16] Nevertheless, the existing intellectual property regime still needs to be adjusted in order to make effective. In this paper, we will analyze how it is possible to fit traditional knowledge into the existing intellectual property system, specifically patent law protection.

The patent law system is oriented to the promotion of science through a grant by the state of a legal monopoly to the inventor, who gets the right to exclude others from the use, production, and sale of the invention. These exclusive rights are granted for a limited period, during which the inventor can obtain fair compensation for his/her effort, investment, and time used in the development of the invention. In exchange, the state gets the full disclosure of the invention, which allows others to continue developing inventions for the well being of society.

In broad terms, patents can be defined as exclusive rights granted for an invention - either a product or a process - that offers a new technical solution to a specific problem. A patent implies the grant of a "monopoly" to an inventor who has used his knowledge and skills to produce a product or process which is new, involves an inventive step and is capable of industrial application. This "monopoly" is limited in time and allows for the patent holder to exercise an exclusive right over the invention and benefit

[14] Charles McManis, *Fitting Traditional Knowledge Protection and Biopiracy Claims into the Existing Intellectual Property and Unfair Competition Framework, in* INTELLECTUAL PROPERTY AND BIOLOGICAL RESOURCES 430-31 (Burton Ong ed., Marshall Cavendish, Singapore 2004).

[15] *See id*. at 425.

[16] *See* WIPO, *supra* note 2, at 17.

commercially from its exploitation. The grant of a patent is conditioned upon the full public disclosure of the invention in order to enable others to improve on existing inventions and technology in general.[17]

The procedure for granting patent rights establishes that an invention can gain patent protection if it satisfies the requirements of novelty, non-obviousness, and industrial application. In Article 27.1, the TRIPS Agreement clearly states that "[s]ubject to the provisions of paragraphs 2 and 3, patents shall be available for any inventions, whether products or processes, in all fields of technology, provided that they are new, involve an inventive step and are capable of industrial application."[18] Therefore, for the purposes of this study, it is important to clarify the meaning and extension of these three criteria.

Novelty refers to the "newness" of an established invention. An invention is novel when there is no prior art. Prior art is the knowledge base that existed before the invention was discovered or before the invention was disclosed by the filing of a patent application.[19] There is no international standard of novelty, which means that the domestic legislation of each country defines the extension of novelty according to their needs and reality. In that sense, the national laws decide what can be considered prior art. In this respect, Professor Charles McManis states:

> "Novelty" in patent law means little bit more than that the claimed invention is not disclosed in the "prior art," however the legal term of art turns out to be defined under national law. What counts as prior art and how "novelty" is defined in various patent systems around the world is highly variable, and neither the Paris Convention nor the TRIPS Agreement prescribes a particular definition of either prior art or novelty.[20]

Non-obviousness "refers to the presence of an inventive step. In order for an inventive step to be present, the invention or innovation must not have

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[17] *See* MANUEL RUIZ, THE INTERNATIONAL DEBATE ON TRADITIONAL KNOWLEDGE AS PRIOR ART IN THE PATENT SYSTEM: ISSUES AND OPTIONS FOR DEVELOPING COUNTRIES 5 (Center of International Environmental Law 2002), *available at* http://www.ciel.org/Publications/PriorArt_ManuelRuiz_Oct02.pdf.

[18] TRIPS Agreement art. 27.1, *availbale at* http://www.wto.org/english/tratop_e/trips_e/t_agm3c_e.htm#5.

[19] *See* STEPHEN HANSEN & JUSTIN VANFLEET, TRADITIONAL KNOWLEDGE AND INTELLECTUAL PROPERTY: A HANDBOOK ON ISSUES AND OPTIONS FOR TRADITIONAL KNOWLEDGE HOLDERS IN PROTECTING THEIR INTELLECTUAL PROPERTY AND MAINTAINING BIOLOGICAL DIVERSITY 9 (American Association for the Advancement of Science 2003), *available at* http://shr.aaas.org/tek/handbook.

[20] *See* McManis, *supra* note 14, at 443.

been obvious at the time of its creation to anyone having "ordinary skill in the art." European patent law is more specific, requiring that the invention or innovation must also solve a problem in a technical way."[21] That means that the invention not only needs to be new, but that it also must involve a significant intellectual effort that makes it subject to patent rights. This inventive step should elevate any prior art to another level, that makes the new invention non-obvious to a person skilled in the art.

The invention must not simply be novel, but must result from qualified intellectual effort that makes it non-obvious. This criterion thus requires a higher standard of novelty through an inventive step. Strong protection leading to a competitive advantage shall only be granted to inventions that would be an apparent improvement to prior art to a person skilled in the art practiced by the invention. This requirement is justified by the 'monopoly-profit-incentive' rationale, according to which strong protection shall only be granted to substantial contributions to the technological progress.[22]

The requirement that the invention be capable of industrial application or utility "refers to the existence of a potential market for patented knowledge. To meet this requirement, a public desire for the patented material must exist or have the potential to exist."[23] The main objective of this provision is to avoid speculative patents. This is intended to prevent the acquisition of exclusive rights to innovations that do not have a marketable product in mind and that can be speculatively used when a possible commercial application appears.

This condition is particularly relevant within the fields of biotechnology and chemistry, where it is possible for researchers to develop new compounds with relative ease, yet without, at least initially, any immediate practical application in mind. The criterion of utility again became critical in the evaluation of claims for inventions in the area of biotechnology, in order to prevent "speculative booking" of exclusive rights.[24]

In addition to the substantive requirements, patent law also requires the satisfaction of procedural disclosure requirements. This means that the inventor must disclose in the patent application how to enable the invention or the best mode to put the invention into practice. The objective of this requirement is to promote innovation by ensuring that other people can

[21] *See* HANSEN & VANFLEET, *supra* note 19, at 9.

[22] *See* Philippe Cullet, Christophe Germann, Andrea Nascimento Muller, & Gloria Pasadilla, *Intellectual Property Rights, Plant Genetic Resources and Traditional Knowledge*, *in* RIGHTS TO PLANT GENETIC RESOURCES AND TRADITIONAL KNOWLEDGE 126 (Susette Biber-Klemm &Thomas Cottier eds., CABI, UK, 2006).

[23] *See* HANSEN & VANFLEET, *supra* note 19, at 9.

[24] *See* CULLET ET AL., *supra* note 22, at 125.

access this information and use it as a referent for the development of new inventions.

One of the reasons for this condition is based on the exchange theory of the award of the patent: the patent applicant is awarded exclusive rights in return for the disclosure to society of a new, useful and non-obvious invention. Without a disclosure that enables other persons to benefit from the invention for their own research and development work, this exchange between the inventor and the society would not make sense. This condition also performs the function of filtering out speculative applications, since it constitutes a reliable assessment of the usefulness of the invention for the purpose of its industrial application.[25]

In theory, if traditional knowledge meets these four criteria, then it should be subject to patent protection. This possibility has been suggested particularly for the protection of traditional medicinal knowledge.[26] It is important to establish, that some traditional knowledge can easily meet these requirements. However, as Blakeney has exposed, patent law has been developed by the Western world according to that world's technological and industrial needs and circumstances.[27] Therefore, is it possible that the Western approach to patent law could be applied to compensate indigenous peoples and local communities for their traditional knowledge contributions?

Fitting traditional knowledge within the patent law system causes some intrinsic and practical problems. Intrinsic issues include the concept of property, the motivation of commercial exploitation, the novelty requirement, and the conception of the inventor as an individual.[28]

The concept of property, as we know, has been developed according to the Western approach. According to indigenous world view, the human being and nature occupy complementary roles, which means that both are connected and inter-related in order to maintain an equilibrium.[29] Thus, for indigenous peoples, "life and its forces are seen as a gift to be humbly accepted, not as something to be taken for granted or used to manipulate other life forms. Life is reserved, acknowledged, and reaffirmed through

[25] *See id*. at 126.

[26] *See* Geertrui Van Overwalle, *Holder and User Perspectives in the Traditional Knowledge Debate: A European View*, *in* BIODIVERSITY AND THE LAW 358 (Charles McManis ed., 2007).

[27] *See* Michael Blakeney, *Bioprospecting and the protection of traditional medical knowledge of indigenous peoples: An Australian perspective*, 19 E.I.P.R. 298, 298-303 (1997) (discussing traditional medicinal knowledge protection).

[28] *See* Geertrui Van Overwalle, *supra* note 26, at 359-60

[29] *See* CHIDI OGUAMANAM, INTERNATIONAL LAW AND INDIGENOUS KNOWLEDGE 26, 27 (University of Toronto Press, Canada 2006).

prayer, ceremony, dance and ritual."[30] This holistic cosmovision inter-relates all dimensions of the natural and supernatural world.[31] This knowledge about the interrelation of nature, the human being, the natural, and the supernatural world are the fundamental basis for traditional knowledge and heritage. As a consequence, because nature and resources are conceived as crucial elements for life, indigenous peoples have not developed a concept of property in the way that Western nations did. For indigenous peoples, resources shall be shared within the community in order to maintain life but at the same time respect nature. Nevertheless, this communal sense does not apply to all resources. For instance, specific knowledge is only held by certain members of the community. In this respect, Graham Dutfield states:

> Traditional proprietary systems relating to scarce tangibles such as land, resources and goods, and to valuable intangibles like certain knowledge and cultural expressions, are often highly complex and varied. Generalizations should be made with extreme caution. However, it appears frequently to be the case that knowledge and resources are communally held. While individuals and families may hold lands, resources or knowledge for their own use, ownership is often subject to customary law and practice and based on the collective consent of the community. Nonetheless, the idea that traditional property rights are always collective or communal in nature while Western notions of property are inherently individualist is an inaccurate cliché. While this may appear to contradict what we have just stated, specialized knowledge may be held exclusively by males, females, certain lineage groups, or ritual or society specialists (such as shamans) to which they have rights of varying levels of exclusivity. But in many cases, this does not necessarily give that group the right to privatize what may be more widely considered to be the communal heritage.[32]

Therefore, we can conclude that depending on the characteristics of the traditional knowledge and the values of the community that holds this knowledge, the concept of property can be applied. In addition, if we consider the different legal mechanisms that exist to maintain property, it is possible to use a legal figure that can allow the community to hold the control over the traditional knowledge under the patent law system.

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[30] James Henderson, *Ayukpachi: Empowering Aboriginal Thought*, *in* RECLAIMING INDIGENOUS VOICES AND VISION 258 (Marie Battiste ed., UBC Press, Vancouver 2000).

[31] *See* OGUAMANAM, *supra* note 29, at 16.

[32] GRAHAM DUTFIELD, PROTECTING TRADITIONAL KNOWLEDGE: PATHWAYS TO THE FUTURE 2, (International Centre for Trade and Sustainable Development, Switzerland 2006).

Another issue is the motivation of indigenous people regarding commercial exploitation of traditional knowledge. As previously stated, traditional knowledge is conceived as a whole, in which the natural and spiritual world work together for the well being of the community.[33] For indigenous people, traditional knowledge has a sacred value that constitutes an element of identity. As Doctor Nuno Carvalho says, "TK is a means of cultural identification, be it TK strictu sensu or be it the expressions of TK. In other words, even the technical elements of TK, because of their particular insertion in a cultural context, are associated in an indissoluble manner with the identity of the community. There must be an unbreakable link that connects TK to its creators."[34] Therefore, traditionally, indigenous peoples do not conceive traditional knowledge as a commodity subject to trade; however, it is a decision that has been made by the community. Patent law contemplates a limited period of exclusivity, in which the inventor can commercialize the invention and obtain a fair reward for their effort. Nevertheless, this approach can be less attractive for indigenous people because of the spiritual meaning imputed to TK. In this respect, another problem relates to the final goal of patent law. The principal rationale of patent law is to provide an incentive for inventiveness and creativity, commercialization and distribution, by offering the patent holder a period of time during which his rights are immunized from competition. Indigenous peoples have been reported to be not primarily concerned with the commercial exploitation of their knowledge and market economic values. As Balick points out, knowledge may have its greatest value to indigenous peoples because of its ties with cultural identity or its sacred significance.[35]

The novelty requirement is another problem that has to be analyzed within this field. One of the main characteristics of traditional knowledge is that it is conceived as a "creation over a long period of time in which it has been passed down from generation to generation."[36] This collective character of traditional knowledge creates problems with the novelty requirement.[37] According to the Western point of view, if knowledge is passed down through generations, that knowledge is in the public domain.[38] Therefore,

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[33] *See* OGUAMANAM, *supra* note 29, at 15-17.

[34] *See* Nuno Pires de Carvalho, *supra* note 6, at 243.

[35] *See* Geertrui Van Overwalle, *supra* note 26, at 359.

[36] Walter H. Lewis & Veena Ramani, *Ethics and Practice in Ethnobiology: Analysis of the International Cooperative Biodiversity Group Project in Peru*, *in* BIODIVERSITY AND THE LAW 394 (Charles McManis ed., 2007).

[37] *See* SILKE VON LEWINSKI & ANJA VON HAHN, INDIGENOUS HERITAGE AND INTELLECTUAL PROPERTY 65 (Kluwer Law International, Netherlands 2004).

[38] *See* Doris Estelle Long, *Traditional Knowledge and the Fight for the Public Domain*, 5 J. MARSHALL REV. INTELL. PROP. L. 317, 321 (2006).

how can traditional knowledge be novel if it is part of the public domain? This is a misconception, because not all traditional knowledge is shared by the community. In fact, some knowledge is reserved by few members or even by one member of the community, such as the shaman.[39] "Recent investigations ... have shown that not all indigenous knowledge is communally shared, and not all of it is considered to be in the public domain. Various healing methods have been reported to have been held under a secrecy regime."[40] In addition, traditional knowledge holders have developed their own mechanisms to regulate access and use of traditional knowledge. Therefore, if the knowledge is protected by some sort of regime that regulates its management, then it cannot be considered to be a part of the public domain. In this respect, Graham Dutfield states:

> Many traditional societies have their own custom-based "intellectual property" systems, which are sometimes quite complex. Customary rules governing access to and use of knowledge do not necessarily differ all that widely from western intellectual property formulations, but in the vast majority of cases they almost certainly do. Nonetheless, there is a tendency to treat such rules with disrespect or to ignore them as if they do not exist. However, knowledge thought to be part of the public domain may in some cases turn out under customary law to remain subject to the legal claims of individuals and communities. Even if one disregards customary law, the unauthorized dissemination or use of certain publicly available traditional knowledge could sometimes be challenged on the basis of concepts existing in the western legal system, such as copyright, breach of confidence and misappropriation. Accordingly and in consequence, nothing is being taken from the public domain that should be there, but only what should not be. … The public domain is being promoted in opposition to privatization as part of a debate about intellectual property rights, a discussion that does not easily accommodate the specific interests and claims of non-Western societies. Why is this case? Disclosed TK has from the distant past to the present been treated as belonging to nobody. Consequently, many indigenous peoples' representatives are concerned that pro-public domain rhetoric, sympathetic as many of them are about the sentiments behind it, may inadvertently threaten their rights. Indeed, the public domain concept is problematic from the perspective of many traditional societies in which TK holders or others, such as tribal

[39] *See* Lowell John Bean, *California Indian Shamanism and Folk Curing*, *in* AMERICAN FOLK MEDICINE 111 (Hand Wayland ed., University of California Press 1976).

[40] *See* Geertrui Van Overwalle, *supra* note 26, at 359.

> elders, have permanent responsibilities concerning the use of such knowledge, irrespective of whether it is secret, is known to just a few people, or is known to thousands of people throughout the world. Custodianship responsibilities do not necessarily cease to exist just because the knowledge has been placed in the so-called public domain. There is no doubt that a tremendous amount of TK has been disclosed and disseminated over the years without the authorization of the holders.[41]

A fourth impediment is the conception of the inventor as an "individual, solitary, and original creator, or a group of individuals (so-called joint inventorship), not collective entities."[42] However, this point is still arguable because not all traditional knowledge is created by the whole community. It has been stated that some traditional knowledge can be developed by one individual within the community. "In general, creation of TK is an incremental and collective process, but it does not follow that TK is not the products of individuals. Depending on the customary laws and principles applicable to particular situations, nothing stands in the way of recognizing an individual creation as a genuine piece of TK."[43] This makes it possible to protect traditional knowledge not only under patent law, but also under copyright law. In this respect, Michael J. Balick states, "One way of strengthening the position of the traditional healer employed in the Belize project has been to consider these people as colleagues and teachers, rather than as informants. ... By including traditional healers who provided information for research as co-authors or providing acknowledgment using their names, all parties benefit."[44]

Another solution for this problem is the use of the joint inventorship figure. To use the joint inventorship concept, it is necessary that "each of the joint inventors have contributed to the inventive conception, working on the same subject matter and making the same contributions to the inventive thought ant to the final result."[45] Therefore, this concept could be used only under certain circumstances, in which the participation of the traditional knowledge holder has been tangible and direct throughout the process, as opposed to isolated or indirect participation. In this respect, Doctor Nuno Carvalho says that "shamans who supply relevant, if not crucial, genetic material may provide important support for the activities of the research and

[41] *See* DUTFIELD, *supra* note 32, at 8-9.

[42] *See* Geertrui Van Overwalle, *supra* note 26, at 360.

[43] *See* Nuno Pires de Carvalho, *supra* note 6, at 243.

[44] Michael J. Balick, *Traditional Knowledge: Lessons from the Past, Lessons for the Future*, *in* BIODIVERSITY AND THE LAW 287 (Charles McManis ed., 2007).

[45] *See* Geertrui Van Overwalle, *supra* note 26, at 360.

development of pharmaceutical and biotechnological companies, but they are not considered co-inventors of the products and processes obtains as ultimate derivatives of those genetic resources."[46]

Nevertheless, in some cases, the concept of joint-inventorship has been successfully applied. That is the case with the ICBG Project in Peru. The ICBG is a grant which supports the idea that the "discovery and development of pharmaceutical and other useful agents from natural products can promote economic opportunities and enhanced research capacity in developing countries while conserving the biological resources from which these products are derived."[47] The ICBG Project is a role model, because it incorporates diverse mechanisms for the protection of traditional knowledge. In this project, prior informed consent was required for access to genetic resources and traditional knowledge. Agreements containing the principles of access and benefit-sharing were also signed by the parties, and existing intellectual property rights as patents were used to protect traditional knowledge and guarantee fair compensation to traditional knowledge holders.[48]

Each agreement recognizes that the traditional knowledge of the indigenous people is their cultural legacy and that the people have a right for such knowledge to be protected from the public domain. They state that such knowledge is being provided voluntarily and is being retained in confidence. Should such information prove valuable, then the original IPR of the indigenous people over such knowledge would be preserved through the filing of appropriate patents, and by the inventors assigning shared ownership of the patents to the indigenous federations. The agreements also recognize the ownership and patrimony of the Peruvian state over certain tangible resources (whole plants) collected by the researchers in Peru for scientific purposes and for making extracts, fractions and isolating compounds of potential commercial use as new pharmaceuticals.[49]

IV. Conclusion

In conclusion, despite these issues, we can still maintain the position that if traditional knowledge meets the requirements established by patent law, it could be subject to protection. We can sustain this asseveration in the fact that all these intrinsic issues can be overcome. The first step is to consider the opinion of indigenous and local communities, in order to identify their interest in protecting their traditional knowledge under the patent regime and

[46] Nuno Pires de Carvalho, *supra* note 6, at 251.
[47] *See* Lewis & Ramani, *supra* note 36, at 400.
[48] *See id*. at 400-10.
[49] *See id*. at 405.

conciliate the Western cosmovision with their principles and values. Second, it is to adjust the concept of the legal standards to the national reality and the interests of the communities. Consequently, with the right approach, national governments can make it possible to traditional knowledge to comply with the TRIPS minimum requirements of patentability in order to get an effective protection.

Therefore, we support the thesis that countries should work on the application of existing intellectual property rights such as patent law. It has been said that existing IPRs are opposed to TK's nature; however, the best way to protect TK and respect all that it represents is through an immediate and effective protection that nowadays it is only available through the existing intellectual property rights.

Cited as:

Bluebook Style: Sophia F. Espinosa, *Patent Law and the Protection of Traditional Knowledge*, 1 NTUT J. of INTELL. PROP. L. & MGMT. 159 (2012).

APA Style: Espinosa, S. F. (2012). Patent law and the protection of traditional knowledge. *NTUT Journal of Intellectual Property Law & Management, 1*(2), 159-174.