



Nature of Traditional Knowledge and its Protection --- Taiwan's Perspective

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I. Introduction

Starting in the 1970s, multinational pharmaceutical and chemical corporations gradually started heading to areas in other parts of the world, areas rich in biodiversity, to conduct bio-prospecting concerning natural resources. These areas are frequently in developing countries of tropical areas, and especially in areas where indigenous peoples live. The multinational corporations further researched and developed these resources, and the protected the results of the R&D with intellectual property (IP) protection to make a profit. These activities raise the issues of protecting genetic resources and traditional knowledge (TK).

Originally, protection was restricted to for certain creations (such as folklore, music, dance, etc.) of indigenous people, but later biologists and other environmental groups pushed for expansion of this protection to include protection of other forms of biodiversity. These groups felt that the traditional knowledge of indigenous peoples and local communities in the fields of agriculture, medicine, and ecology, etc., could have very important contributions for sustainable development. These ideas are present in the 1992 Convention on Biodiversity (CBD), specifically in Article 8(j): Subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices.

Moreover, from 1998, the World Intellectual Property Organization (WIPO) has conducted nine fact-finding missions in 28 countries (including countries in South Asia, the South Pacific, Arab nations, Southeast Africa, West Africa, the Americas, etc.), visiting indigenous peoples, and local tribes, governmental officials, the scholarly research institutions, and non-governmental associations (NGOs) etc. These visits affirm that TK in many fields (including agriculture, medicine, art, etc.) is the source for innovative technology.

Many scholars have conducted research regarding TK protection in recent years, with the goal of increasing protection of TK. Moreover, international



forums have distributed many suggestions for action plans and regulations. The goal of this article is to compare TK with modern technology, and to discuss the protection of TK at the international level, as well as in Taiwan, as a reference for the different methods of TK protection.

II. The Definition of Traditional Knowledge (TK)

What is TK? In July 2003, the Secretariat of the WIPO Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (IGC), defined TK as: tradition-based literary, artistic or scientific works; performances; inventions; scientific discoveries; designs; 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.¹ “Tradition-based” refers to knowledge systems, creations, innovations and cultural expressions which have generally been transmitted from generation to generation; are generally regarded as pertaining to a particular people or its territory; and, are constantly evolving in response to a changing environment.² Categories of traditional knowledge 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, movable cultural properties.³

In reference to the above, the elements of TK include the following four points:

¹ WIPO 2003 Composite Study on Protection of Traditional Knowledge. WIPO/GRTKF/IC/5/8, p. 24. http://www.wipo.int/documents/en/meetings/2003/igc/pdf/grtkf_ic_5_8.pdf

² WIPO 2001 Intellectual Property Needs and Expectations of Traditional Knowledge Holders, Report on Fact-Finding Missions on Intellectual Property and Traditional Knowledge (1998-1999).

³ Mugabe, J. 1998 Intellectual property protection and traditional knowledge, an exploration in international policy discourse. <http://www.acts.or.ke/paper%20-%20intellectual%20property.htm>



1. The scope of TK

TK includes technical knowledge (including agricultural, technical, ecological, medical, and other forms of related technical knowledge), in addition to general TK (including music, dance, sculpture, weaving, designs, clothing, and other folk custom techniques, and other expression of folklore). While the first kind of TK concerns knowledge of natural resources or science and technology, the second kind of TK concerns cultural expression of the humanities and the arts (note that many people refer to the second kind of TK as “expression of folklore” or “expressions of traditional culture”). The two types of TK are different, and the types of protection for these two types of TK are naturally different as well.

2. Whether or not documented

The background of TK and manifestation of TK is quite different; some TK is documented, such as TK concerning traditional medicine. However, the vast majority of TK is NOT documented, perhaps due to custom (for example, the transmission of indigenous medical knowledge by word of mouth from master to disciple, or transmission by movement or performance of a dance, play, or ceremony, etc.). Whether one publishes or records the knowledge makes no difference at all, TK published or not, is still traditional knowledge of the peoples.

3. Ownership of TK

Because tribes and indigenous peoples develop ideas, opinions, or thoughts as TK, the creation of TK is a process of gradual accumulation over time. This is not to say that it is not the product of each individual. The creation of TK may be the work of one individual or the joint efforts of a group of individuals. Therefore, an individual, a family, or a local community, or a tribe may all own TK. For example, several million women and older people have traditional household remedies from their mastery of knowledge of the special medicinal properties of plants. Most TK involves collective ownership by a group of people.

4. Continuous evolution

While TK often appeared in early times when tracing the origin of this knowledge was impossible, TK still changes with the times. For this reason, TK is not truly ancient, backward, or unchangeable knowledge, as TK can develop new information and improvements as a result of this unceasing change.



III. Characteristics of TK

When discussing TK protection, one must first grasp the special characteristics of TK, in order to create the best type of protection system for TK. For this, a comparison of TK and modern science will help explain the special characteristics of TK.

1. The creation of TK is collective and holistic

Science relies on an abstract conceptual framework to interpret phenomena. The description of phenomena is usually quantifiable by scientific experiments, and follows a step-by-step scientific deductive process. In order to figure out the conceptual relationship of complex phenomena of the world, scientific inquiries always involve reduction process. Cause and effect between certain factors are easier to be found by standardizing and leaving alone, as far as possible, all other factors that the inquirer do not looking for. Even with ecology as a science of complex interactions among living and non-living matters of the whole ecosystem, it is inevitable for the research process to be somewhat reductionistic.

On the other hand, indigenous peoples or local communities live their lives with vast knowledge formed over the centuries during their daily life interacting with the environment. Epistemologically, this type of knowledge is holistic in nature and cannot be dissected. For example, a festival after the taboo month celebrating the beginning of the hunting season should avoid the breeding season of the animal, a form of TK that assures sustainable hunting. TK is an articulation of phenomena. Instead of step-by-step deduction, TK uses the repeated verification of an idea that a person or group of people deduce from facts.

However, TK is not necessarily a collective creation. Individual creation is also possible. On the other hand, modern science and technology do not exclude collective creation for innovations; although usually only one or more trained individuals own the technology as a small, definite group of individuals.

2. Oral transmission of TK from generation to generation

Traditionally indigenous peoples have no writing system. Indigenous people would transmit knowledge by oral language or by body language. On



the other hand, the transmission of scientific information relies on written records and publications, and a teacher simply accelerates the transmission of this knowledge orally.

However, not all TK lack the written records. For example, the distribution of classics on Chinese and Indian traditional medicine disseminated TK on Chinese and Indian traditional medicine. WIPO considers both forms of medicine as model forms of TK. Today, indigenous peoples may also use writing to transmit their TK, whether new or old.

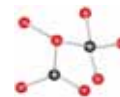
3. TK is changeable, and may evolve because of changes in the social environment

“Traditional” does not just mean knowledge of the past, but rather that the method of creation of this knowledge is in the “traditional” way. Since people’s interaction with the environment produces TK, TK is by no means static, but rather dynamic, because of environmental changes. Since, in the past, the environment changed very slowly, TK also changed in a very slow and continuous way.

Science and technology change frequently, and at a rate that is faster than the rate at which TK changes. However, this does not mean that the speed of innovation of modern “TK” is slow. Today, indigenous peoples and tribal inhabitants may exchange new ideas very quickly. Nevertheless, TK changes are not typically revolutionary, unless outside influences affect such TK. Traditional Chinese medicine still maintains the concepts of the five elements and the principles of Yin and Yang from the Chin and Han Dynasty, a good example to illustrate the nature of the TK.

4. The innovator is often unidentifiable

Many peoples accumulate TK as a collective creation without a written record. Therefore, the innovators are often unidentifiable. Modern technology, by contrast, has written records as a rule, and places great emphasis on the importance of determining the original creator. Nevertheless, since, in modern times, indigenous peoples can invent some TK quickly, their innovator usually is identifiable.



5. Residents of specific areas share TK

Often a closed society creates and preserves its TK. The dissemination of TK is limited and non-systematic. One individual, a small group of individuals, or even an entire community may all share TK. The indigenous peoples usually do not have the same concept of private property as in mainstream society. Modern technology, however, spreads in a broad and systematic manner, and mainstream culture embraces science by granting the specific individuals who create technology individual rights through the IP system.

IV. Methods of Protection of TK

Due to the non-dissectible nature of TK, the realization of TK usually relies upon physical materials. Medicine in indigenous peoples often consists of learning which herbs heal people. Extinction of that plant species means the disappearance of the concept. The disappearance of the concept may leave the herb useless to the people. Because of this, TK protection is of two kinds, which are by no means clear-cut. The first is non-IP protection of TK, while the second is IP protection of TK. Non-IP protection focuses on protection of ecological resources, while IP protection focuses on the protection of the knowledge.

1. Non-IP protection of TK

Non-IP protection includes establishing conservation parks, protecting endangered species, restricting development, protecting cultural remains, and conserving habitats, among other forms of protection. Moreover, the CBD, the Convention of Agriculture, and other international agreements provide protection to genetic resources or TK, and the benefit sharing mechanism. These are the non-IP type protections of TK.

1.1 International regulations

1.1.1 Convention on Biological Diversity (CBD)

The objectives of the Convention on Biological Diversity (CBD) include the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by



appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding (CBD Article 1).⁴

Although the CBD created basic policies and obligations and a system of cooperation of transnational technology and finance, the implementation of the CBD obligations is for each CBD Contracting Party. Given the different perspectives of North and South countries, the purpose of the CBD may prove difficult to meet. Despite that, the CBD has important provisions concerning keeping traditions from disappearing:

- a), respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities (Article 8(j)),
- b), access to genetic resources (Article 15),
- c), sharing in a fair and equitable way the results of research and development and the benefits arising from the commercial and other utilization of genetic resources with the Contracting Party providing such resources (Article 15.7),
- d), International cooperation, etc.

1.1.2 Food and Agriculture Organization (FAO)

After seven years of negotiations, in November 2001 the FAO Conference adopted the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), which came into force in June 29, 2004, after ratification by 55 countries. This legally binding Treaty covers all plant genetic resources relevant to food and agriculture. The objectives of this Treaty are the conservation and sustainable use of plant genetic resources for food and agriculture and the fair and equitable sharing of the benefits arising out of their use, in harmony with the Convention on Biological Diversity, for sustainable agriculture and food security.

The legislative purpose of the ITPGRFA matches that of the CBD, with respect to “the conservation and sustainable usage of plant genetic resources for food and agriculture.” In order to meet the goal, each Contracting Party shall, subject to national legislation, and in cooperation with other Contracting Parties where appropriate, promote an integrated approach to the exploration, conservation and sustainable use of plant genetic resources for food and

⁴ <http://www.biodiv.org/convention/articles.asp>



agriculture and shall in particular:⁵

- a), survey and inventory plant genetic resources for food and agriculture, taking into account the status and degree of variation in existing populations, including those that are of potential use and, as feasible, assess any threats to them;
- b), promote the collection of plant genetic resources for food and agriculture and relevant associated information on those plant genetic resources that are under threat or are of potential use;
- c), promote or support, as appropriate, farmers and local communities' efforts to manage and conserve on-farm their plant genetic resources for food and agriculture;
- d), promote *in situ* conservation of wild crop relatives and wild plants for food production, including in protected areas, by supporting, *inter alia*, the efforts of indigenous and local communities;
- e), cooperate to promote the development of an efficient and sustainable system of *ex situ* conservation, giving due attention to the need for adequate documentation, characterization, regeneration and evaluation, and promote the development and transfer of appropriate technologies for this purpose with a view to improving the sustainable use of plant genetic resources for food and agriculture;
- f), monitor the maintenance of the viability, degree of variation, and the genetic integrity of collections of plant genetic resources for food and agriculture (Article 5.1).

Moreover, the ITPGRFA requires cooperation among the Contracting Parties, including: enhancing international activities to promote conservation, evaluation, documentation, genetic enhancement, plant breeding, seed multiplication; and sharing, providing access to, and exchanging, plant genetic resources for food and agriculture and appropriate information and technology; and establishing or strengthening the capabilities of developing countries and countries with economies in transition with respect to conservation and sustainable use of plant genetic resources for food and agriculture. (Article 7.1 and 7.2(a) and (b))

⁵ <ftp://ext-ftp.fao.org/ag/cgrfa/it/ITPGRRe.pdf>



The Contracting Parties recognize the enormous contribution that the local and indigenous communities and farmers of all regions of the world, particularly those in the centre of origin and crop diversity have made, and will continue to make for the conservation and development of plant genetic resources which constitute the basis of food and agriculture production throughout the world (Article 9.1). Other related provisions include: (a) The multilateral system of access and benefit-sharing (Article 10); (b) The exchange of information, access to and transfer of technology, capacity-building, sharing of monetary and other benefits of commercialization (Article 13); and (c) material transfer agreements (MTA) (Article 12.4, 12.5).

1.1.3 World Intellectual Property Organization (WIPO)

In the year 2000, WIPO established the Intergovernmental Committee for member states to discuss TK protection. This Intergovernmental Committee held several meetings, focusing on (a) the definition and protection of TK; (b) the standardized contract of accession of genetic resources and benefit sharing; and (c) constructing electronic search databases, including traditional knowledge, contract clauses, and judicial opinions, as well as for prior arts research and for public use.⁶

1.2 **Scope of protection**

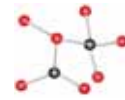
Non-IP protection of TK includes the following kinds of protection:

1.2.1 Conservation of Genetic Resources

States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction (CBD Article 3). CBD Article 4 defines the jurisdictional scope. Therefore, the CBD Contracting Parties bear the obligation to take certain steps to prevent activities that will harm biodiversity.

Under CBD Article 8(j), each Contracting Party shall, as far as possible and as appropriate, and subject to its national legislation, respect, preserve and

⁶ See <http://www.wipo.int/tk/en/databases/tkportal/index.html>.



maintain knowledge, innovations and practices of indigenous and local communities embodying traditional life styles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices.

Identifying TK and monitoring TK are important steps to prevent the disappearance of TK. Under CBD Article 7, this means that each Contracting Party shall, as far as possible and as appropriate, in particular for the purposes of Articles 8 to 10, (a) identify components of biological diversity important for its conservation and sustainable use having regard to the indicative list of categories set down in Annex I; (b) monitor, through sampling and other techniques, the components of biological diversity identified pursuant to subparagraph (a) above, paying particular attention to those requiring urgent conservation measures and those which offer the greatest potential for sustainable use; (c) identify processes and categories of activities which have or are likely to have significant adverse impacts on the conservation and sustainable use of biological diversity, and monitor their effects through sampling and other techniques; and (d) maintain and organize, by any mechanism data, derived from identification and monitoring activities pursuant to subparagraphs (a), (b) and (c) above.

1.2.2 Establishing databases

Over the years, ethnobiologists have explored and recorded TK of indigenous peoples around the world for academic or commercial purposes. The record is by no means a complete picture of the TK. Rather these records are simply the written observations of trained scientists who interpret what they see or hear within the context of the scientific paradigm. Although the comprehensiveness of TK may sometimes sound unfamiliar or even absurd to ethnobiologists, TK often supplies scientists with ideas or hints that may eventually prove useful in modern technology. In this way, much traditional knowledge is dissected to fit the form that is compatible to the IP systems of the mainstream societies.

The patent on turmeric is just one of many famous biopiracy cases. Since the patent authorities lack information about existing technologies related to TK,



they may not realize the technologies are from foreign TK and may grant the patent to applicants. The main reason for the lack of information is that TK often exists orally, or is recorded in ways that patent authorities do not understand. Therefore, although the technology exists in the original country, TK is not common knowledge, and patent authorities around the world have no record of this TK. Establishing databases is an important way to prevent others from taking TK and trying to patent this TK, whether at home or abroad.

A TK database in the examination system of patent authorities helps ensure that when examining patent applications, the patent authority considers TK information as prior art. More over, when deciding whether to include TK in the database, consultation of the TK holders is necessary, in order to ensure that the TK holders obtain remuneration if another uses the TK holder's respective TK.

CBD Article 10(c) and (d) require CBD Contracting Parties, as far as possible and as appropriate, to: a) protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements; and b) support local populations to develop and implement remedial action in degraded areas where biological diversity has been reduced.

1.2.3 Procedures of TK acquisition - Prior informed consent

In Article 15(5) of the CBD it is stated that access to genetic resources shall be subject to prior informed consent of the Contracting Party, providing such resources, unless otherwise determined by that Party. The Philippines implemented these provisions into national law. Under Section 2 of the Philippines' Executive Order No. 247 "Implementing Rules and Regulations on the Prospecting of Biological and Genetic Resources", it requires that prospecting of biological and genetic resources within areas of local communities, including ancestral lands and domains of indigenous communities shall be allowed only with the prior informed consent of such communities obtained through specific procedures.⁷

"Prior informed consent" is not only required for the acquisition of germplasm, but also may be required for biologists whose work is to record TK.

⁷ <http://users.ox.ac.uk/~wgtrr/rp.htm>



Under CBD Article 8(j), one should “respect” knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity. Entering the territories of other peoples and learning the “secrets” of these people without their prior informed consent is clearly not respectful of their knowledge.

1.2.4 Benefit sharing

CBD Contracting Parties shall, as far as possible and as appropriate, promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices (CBD Article 8(j)). According to CBD Article 15(7), each CBD Contracting Party shall take legislative, administrative or policy measures, as appropriate, and in accordance with Articles 16 and 19 and, where necessary, through the financial mechanism established by Articles 20 and 21 with the aim of sharing in a fair and equitable way the results of research and development and the benefits arising from the commercial and other utilization of genetic resources with the Contracting Party providing such resources. Such sharing shall be upon mutually agreed terms.

1.2.5 Ensuring participation of indigenous peoples and local communities

Since *in situ* conservation is of greatest importance, each Contracting Party of the CBD, where appropriate, shall allow for public participation in procedures of environmental impact assessment on those projects that are likely to have significant adverse effects on biological diversity with a view to avoiding or minimizing such effects (CBD Article 14(a)). Moreover, the CBD recognizes the vital role that women play in the conservation and sustainable use of biological diversity, stressing the need for the full participation of women at all levels of policymaking and implementation in biological diversity conservation (CBD Preamble).

1.2.6 International cooperation

Each CBD Contracting Party is required, as far as possible and as appropriate, to cooperate with other Contracting Parties, directly or, where



appropriate, through competent international organizations, in respect of areas beyond national jurisdiction and on other matters of mutual interest, for the conservation and sustainable use of biological diversity (CBD Article 5). Moreover, each CBD Contracting Party is required to cooperate with other States and international organizations in developing educational and public awareness programmes, with respect to conservation and sustainable use of biological diversity (CBD Article 13(b)).

Each CBD Contracting Party is required, as far as possible and as appropriate, to cooperate in providing financial and other support for *in-situ* conservation, particularly to developing countries (CBD Article 8(m)).

The CBD Contracting Parties, taking into account the special needs of developing countries, are required to establish and maintain programmes for scientific and technical education and training in measures for the identification, conservation and sustainable use of biological diversity and its components and provide support for such education and training for the specific needs of developing countries (CBD Article 12(a)).

2. IP protection of TK

2.1 Background

IP protection for TK is of two kinds: one is positive legal protection, and the other is defensive protection. Positive protection is protection under the existing IP system, under a *sui generis* system, or by court interpretation. Defensive protection, however, is a form of special protection, that is, by provisions adopted in the law or by the regulatory authorities to prevent the claiming or the granting of IP rights to unauthorized persons or organizations concerning TK, cultural expression, or products. For example, revealing TK makes TK no longer novel, a requirement for patent. Positive protection measures may also provide defensive protection and *vice versa*. The distinction between the two forms of protection, then, is not always clear.⁸

⁸ Dutfield, G. 2003 Protecting Traditional Knowledge and Folklore: A review of progress in diplomacy and policy formulation. International Centre for Trade and Sustainable Development (ICTSD), Geneva. http://www.ictsd.org/pubs/ictsd_series/iprs/CS_dutfield.pdf



2.2 Positive protection

2.2.1 Protecting TK under the existing IP system

The main pattern of protection of TK as IP is as follows: Protecting under the existing IP system can avoid setting up new legislations or creating new rights. However, due basic differences between TK and IP, some modifications of current legal system are required. Some possible modifications include the following:

2.2.1.1 *Patent Law*

Is protection of TK under the Patent Law possible? First, one must determine whether TK is patentable subject matter, that is, a creation of technical concepts by utilizing the rules of nature. Then, one must determine whether the TK meets the requirements of novelty, inventive step, and industrial applicability.

According to TRIPs, 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 (TRIPS Article 27). Those applicable products made from TK or processes of TK should not be excluded from this provision. Some scientific inventions are not applicable and hence not patentable, such as mathematical equations. TK is not different. Much TK is not associated with physical materials; these inventions may not be patented. Essentially biological processes for the production of plants and animals of indigenous peoples or farmers may also not be patented.

Novelty is one of the criteria for patentability of an invention. Much TK has been documented and published, and is seen as prior art, which may be used as evidence precluding patentability. On the contrary, TK that remains undisclosed to the outside world does not lose its novelty, even if it has existed for many centuries. Modern inventions of a big company should be considered novel as long as it has not been published before the time of application, notwithstanding that the inventions were invented twenty years ago.

Many inventions can be patented, but only if they can be repeated independently of the participating persons. Modern technologies that are based on the reductionistic approach meet the criteria of repeatability more easily than TK, which is of a holistic nature, since it often requires the same environment in



which it was created to achieve the same functions. Modern inventions that are based on TK are more repeatable because so many factors that form TK have been excluded during the invention process.

The level of repeatability required by the patent protection is somehow lowered after that patent covered biological invention. For example, in the system of plant breeders' rights, a *sui generis* patent law, requires the variety to be both uniform and stable. That means that one should be able to reproduce the variety repeatedly. However, while the self-pollinated species require a higher level of uniformity and stability, cross-pollinated species do not.

The level of the inventive step (sometimes called "non-obviousness") required varies in the patent systems of different countries. Minor improvements of prior patented invention sometimes can obtain patents. Many new formulas of traditional Chinese medicines have been patented now in China.⁹

Some scholars believe that patent protection of TK is inappropriate, and that people should not obtain patent protection on TK at all. Two methods can prevent the patenting of TK. Firstly exclude TK itself from protection entirely. Secondly include TK as prior technology, ensuring that patent offices compare TK with patent applications during the patent examination. If the country takes the second approach, these countries could require for the applicant for a patent based on TK to submit with the application the authorization of the TK holders.¹⁰ Countries could adopt the "absolute novelty" in the patent examination procedure, and require the inclusion of TK published or disclosed publicly prior to the application as prior technology. Countries should demand a higher inventive step requirement when examining patents related to TK, in order to prevent applications that are simply based on TK from becoming patents. These are all ways that prevent people from copying another's TK and applying for a patent.¹¹

However, this is not to say that anything related to TK is not patentable. TK-based inventions, which meet the requirements of novelty, inventive step,

⁹ Chen, K.J. (Editor-in-Chief) 1997 Chinese Patent Medicines. (English Translation) Hunan Science & Technology Press, 1997.

¹⁰ Wen-Yin Chen 1994 The Feasibility Study of Traditional Knowledge Protection Under Patent System, *CHENCHI L. J.*, 78:189-90.

¹¹ Brett, N. 2002 Australia Patent Law Changes. <http://ficpi.org/newsletters/50/AUreform.html>.



and industrial applicability, are still patentable. Many countries have enacted legislation requiring TK owners to consent to the TK-related parts, for the TK-based invention to be patentable. Without the consent of the TK owners, some laws require the patent authorities to reject the application.¹²

For example, in the Andean Community on a Common Industrial Property Regime Decision 486 (Decision 486) Article 26 states that applications for patents shall be filed with the competent national office and shall contain:¹³

- a), a copy of the contract for access, if the products or processes for which a patent application is being filed were obtained or developed from genetic resources or byproducts originating in one of the Member Countries;
- b), if applicable, a copy of the document that certifies the license or authorization to use the traditional knowledge of indigenous, African American, or local communities in the Member Countries where the products or processes whose protection is being requested was obtained or developed on the basis of the knowledge originating in any one of the Member Countries, pursuant to the provisions of Decision 391 and its effective amendments and regulations;
- c), the certificate of deposit of the biological material, if applicable; and,
- d), a copy of the document attesting to the transfer of the patent right by the inventor to the applicant or assignee.

Thus, anyone (including inventors or pharmaceutical multinational companies) wishing to access those resources must file an application and sign an access contract with the suppliers.

Moreover, the Andean Community on a Common Industrial Property Regime Decision 391 (Decision 391) creates provisions for access contracts:

The State and the applicant requesting the access may enter into access contracts (Decision 391 Article 32).

The terms of the access contract must be in keeping with the provisions of this Decision and Member Country national legislation (Decision 391 Article 33).

The access contract shall bear in mind the rights and interests of the

¹² supra note 2, p. 76.

¹³ Ruiz, M. 2002 The Andean Community's New Industrial Property Regime: Creating Synergies between the CBD and Intellectual Property Rights, BRIDGES, 4(9).
<http://www.ipronline.org/ictsd/docs/RuizBridgesYear4N9NovDec2000.pdf>.



suppliers of genetic resources and their by-products, the biological resources that contain them and the intangible component as applicable, in accordance with the corresponding contracts (Decision 391 Article 34).

When access is requested to genetic resources or their by-products with an intangible component, the access contract shall incorporate, as an integral part of that contract, an annex stipulating the fair and equitable distribution of the profits from use of that component (Decision 391 Article 35).¹⁴

The competent national authority may, either ex officio or at the request of a party, and at any time, declare a patent null and void (Decision 486 Article 75).

In conclusion, countries could use the system under Decision 486 to ensure that they fulfill the general principles under the CBD.¹⁵

2.2.1.2 Trade secret law

According to TRIPS Article 39(2), natural 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 so long as such information:

- a), is 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;
- b), has commercial value because it is secret; and
- c), has been subject to reasonable steps under the circumstances, by the person lawfully in control of the information, to keep it secret.

Trade secret law can protect TK that meets the above requirements. Moreover, in order to provide more effective protection of TK, countries can consider analyzing and categorizing TK and storing TK in a limited-access

¹⁴ Larrea Monard, H.A. 2001 Intellectual property, traditional knowledge and Genetic resources: Recent legislative developments in the Andean community. WIPO/ECTK/SOF/01/3.13 p. 5-6.

¹⁵ Ruiz, M. 2000 The Andean Community's New Industrial Property Regime: Creating Synergies Between the CBD and Intellectual Property Rights.
<http://www.ipronline.org/ictsd/docs/RuizBridgesYear4N9NovDec2000.pdf>



database, to protect this TK from disclosure¹⁶.

However, trade secret protection of TK is difficult. Trade secrets of TK are hard to maintain. TK (originally known only by residents in local communities) may become non-secret when researchers, government organizations, or other institutions publish this TK. If TK has commercial value, maintaining the secrecy of such TK is even more difficult.

2.2.1.3 Trademark law

Trademark law may protect TK by approval marks or collective marks. Australia and New Zealand¹⁷ allow protection of indigenous innovations and creations with various marks. First, in Australia, the National Indigenous Arts Advocacy Association created a Label of Authenticity in 1999 to protect the arts, products, and services the indigenous peoples.

Two related cases exist:

The first case (brought with the aid of the Indigenous and Torres Strait Islander Commission (ATSIC) and the Australia Council for the Arts) concerns the traditional musical instrument, the didgeridoo. In this case, non-indigenous and non-Torres Strait Islanders manufactured and exported this instrument. The indigenous peoples expressed the need for an authentication mark to control such activities.

The second case concerns Tiwi artists who created an authenticity label for registration as a trademark, and developed rules for its use, management, and enforcement.¹⁸

Second, in New Zealand, the 2002 amendments to the New Zealand Trade Mark Act contain a number of provisions designed to address concerns of Maori regarding the inappropriate registration of Maori text and imagery as trade marks,

¹⁶ Dutfield, G. 1999 The public and private domains: Intellectual property rights in traditional ecological knowledge. WP 03/99, OIPRC Electronic Journal of Intellectual Property Rights. <http://www.oiprc.ox.ac.uk/EJWP0399.html>

¹⁷ "The registration of collective and certification trademarks to protect tradition-based innovations and creations is under active exploration in Australia and New Zealand." WIPO Report 2001 (supra note 2), p. 73.

¹⁸ WIPO Report 2001 (supra note 2), p. 73.



including:

Absolute grounds for refusal to register a trade mark where the Commissioner of Trade Marks considers on reasonable grounds that its use or registration would be likely to “offend a significant section of the community,” including Maori (New Zealand Trade Marks Act Section 17).

A provision requiring the Commissioner of Trade Marks to appoint an advisory committee to advise the Commissioner whether the proposed registration or use of a trade mark that is, or appears to be, derivative of Maori text and imagery is likely to be offensive to Maori.¹⁹

Article 136 of the Andean Community Decision 486²⁰ provides that those signs the use of which in commerce may constitute an impediment to the rights of third parties, may likewise not be registered as trademarks, in particular where the signs:

a) consist of the name of indigenous, African American, or local communities, or of such denominations, words, letters, characters, or signs as are used to distinguish their products, services or methods of processing, or that constitute an expression of their culture or practice, unless the application is filed by the community itself or with its express consent; and,

b) consist of a total or partial reproduction, imitation, translation, transliteration, or transcription of a well-known sign belonging to a third party without regard to the type of product or service to which it shall be applied, the use of which would lead to a likelihood of confusion or mistaken association with that party, taking unfair advantage of the prestige of the sign; or weakening its distinctive force or its use for commercial or advertising purposes.

Moreover, geographical indications²¹, indication of source²², or appellations of origin²³ are important methods to protect traditional knowledge. These three

¹⁹ WIPO Report 2001 (supra note 2), p. 74

²⁰ See supra note 13.

²¹ Usage under TRIPS.

²² Usage from the Paris Convention for the Protection of Industrial Property and the Madrid Agreement for the repression of false or deceptive indication of source on goods.

²³ Usage from Lisbon Agreement for the protection of Appellation of Origin and their international registration.



types of protection are very similar. According to TRIPS Article 22, geographical indications are, for the purposes of this Agreement, indications which identify a good as originating in the territory of a Member, or a region or locality in that territory, where a given quality, reputation or other characteristic of the good is essentially attributable to its geographical origin. Under certain circumstances, the above methods of protection can be an important way to protect TK. However, geographical indications, indication of source, or appellations of origin can only prevent products from being passed off as goods from that particular area. These protections do not protect TK *per se*.

2.2.1.4 Copyright law and other related rights

When TK concerns the expression of folklore, since it is similar to the “work” in copyright law, some countries protect this TK under copyright law. However, protection of TK as copyright may encounter the following problems:

An expression of folklore is not exactly the same as the “work,” the subject matter protected under copyright law. Copyright law does not protect many expressions of folklore, such as religious activities, architectural styles. Copyright law does not protect these. Moreover, the expression of folklore may not be in fixed form. Some countries require fixation for a certain period of time for protection. Expressions of folklore (such as oral literature, religious activities, secret prescription) are often not fixed and thus are not protectable under the copyright law. Generally speaking, expressions of folklore include more than works defined under the copyright laws.

Copyright law has the basic principles concerning requirements of original creation, identification of the author, and the term of protection. However, many expressions of folklore are formed over a long period of time, and lack original creation. Meanwhile, the creator of expression of folklore often is non-identifiable. Most folklore creations exceed the term of copyright protection. In conclusion, to include expression of folklore into copyright protection would require huge changes to the copyright law, even possibly threatening the purpose of copyright.

Due to the above reasons, UNESCO and WIPO approved the Model Provisions for National Laws on the Protection of Expressions of Folklore against Illicit Exploitation and Other Prejudicial Actions (Model Provisions), which established a *sui*



generis system independent of the copyright law.²⁴ Furthermore, the Model Provisions use the term “expression of folklore” to substitute the term “works of folklore” in traditional copyright law. The main purpose is to highlight the difference between “folklore creations” and copyright works, and note that a *sui generis* regime is more appropriate for protecting folklore.

2.2.2 Designing a *sui generis* regime for the Protection of TK

On June 26, 2000, Panama’s Legislative Assembly created Law No. 20 on the special intellectual property regime upon collective rights of indigenous communities, for the protection of their cultural identities and traditional knowledge upon their creations (such as inventions, models, drawings and designs, innovations), as well as the cultural elements of their history, music, art and traditional artistic expressions, capable of commercial use (Panama’s Law No. 20).²⁵ The purpose of Panama’s Law No. 20 is to protect the collective rights of intellectual property and traditional knowledge of the indigenous communities, and Panama’s Law No. 20 includes many provisions for the protection of TK, including IP protection.

2.3 Defensive protection

Defensive protection of TK includes specific ways to prevent others from obtaining IP protection on TK. For example, establishing TK databases or including information concerning TK as prior technology, are ways to prevent others from patenting TK. WIPO provides the following suggestions:²⁶

- a), before establishing a database, approval of TK holders is necessary.
- b), the date of disclosure should be marked clearly, to identify whether the application lacks novelty.
- c), the form of media of the disclosure is important to consider, ensuring that the content of databases over the Internet will not disappear, and that the databases remain unchangeable.
- d), the disclosure of TK should be as detailed as possible.
- e), the degree of disclosure is also important. If one local community teaches this TK

²⁴ WIPO 2002 Final report on national experiences with the legal protection of expressions of folklore. WIPO/GRTKF/IC/3/10.

http://www.wipo.int/documents/en/meetings/2002/igc/pdf/grtkfic3_10.pdf

²⁵ Legislative assembly, LAW No. 20 (of June 26, 2000).

²⁶ WIPO/GRTKF/IC/5/6.



in the community, this does not necessarily mean that this TK is public. Countries should deem the TK of one isolated community not public knowledge until this TK is disclosed to outsiders.

Although the disclosure of TK in a database is for defensive purposes, the process of the disclosure can create new forms of IP (such as copyright or database protection). TK deserves proper treatment under these forms of IP protection.

2.4 Shortcoming of IP protection of TK

Since TK and modern technology are so different, not only in production but also in protection, one must ask whether it is even appropriate to protect TK under the current IP system. IP protection of TK may face the following difficulties:

2.4.1 Positive protection

IP protection does not provide complete, but rather fragmented, protection of TK. The main reasons include: TK is an epistemological system that results from man's interaction with the environment. Furthermore, the function and usefulness of TK are closely related to background, culture, and religion. Protecting TK under the current IP system can only provide limited protection. In cases of infringement or misappropriation, IP protection considers damages. However, this does not assist local communities in cases of violations of religious or cultural rights, since compensation for violations of religious and cultural rights under the IP system is limited.

Moreover, exercise of TK often relies on experience. Some experiences may not be documented, which is a basic requirement for IP protection.

Overemphasizing IP protection of TK may affect the management of resources and the respect of culture, which may endanger the conservation of TK.

2.4.2 Defensive legal protection

Although defensive protection can prevent the patenting of TK by others, defensive protection is limited to those disclosed knowledge. As for undisclosed knowledge, the defensive protection system is powerless. Moreover, constructing databases of undisclosed TK may allow others to acquire and misuse data more easily.



V. TK Protection in Taiwan

1. Background

1.1 Taiwan, an area of rich biodiversity and cultural diversity

Although Taiwan is a small island, Taiwan has diverse biology, ethnic groups, and culture, and thus has abundant natural and cultural resources. As for the biodiversity, although Taiwan is in the subtropical zone, because two thirds of Taiwan's land is mountainous land (varying in altitude), Taiwan has a diverse climate. Taiwan has various areas (subtropical, warm temperate, temperate, and cold temperate, sub-frigid, and frigid) with multiple species of botanical and biological resources in these areas. Moreover, as an island, Taiwan has plentiful oceanic biological resources. As for ethnic groups in Taiwan, in addition to the main group of Han Chinese, Taiwan have 12 additional tribes, each of which has its own abundant TK. In sum, Taiwan is rich in TK. Indigenous areas particularly rich with TK remain undiscovered. However, in recent decades, TK is disappearing at a fast rate because of assimilation with other peoples. As such, TK protection is quite urgent.

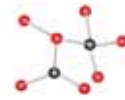
It is important to note that not only indigenous peoples, but also local communities (such as farming and fishing villages) create TK. This article, however, addresses indigenous peoples' TK in greater detail, however, given the size constraints of this article. A brief description of the social structure of the indigenous peoples is important to understanding the current protection of TK in Taiwan.

1.2 Taiwan's indigenous peoples and indigenous culture

Indigenous peoples in Taiwan are of the group of Austronesian peoples.^{27, 28} During the 18th and 19th centuries, when Western countries reached the heights of their power at navigating the high seas by ship, Western explorers discovered many coral islands and island groups in the Austronesian area. Scholars refer to these islands as "the Southern Island Groups." Because of similarities in the languages

²⁷ Mabuchi, T. (馬淵東一) 1998 Taiwan indigenous people. In (Ying-Gui Huang ed.) *The Thesis Collection of Taiwan Indigenous People's Society and Culture*. Linking Publishing Co., Taipei. p. 47.

²⁸ Huang, Y.G. (黃應貴) 1998 Two society pattern and its meaning of Taiwan indigenous tribes. In (Ying-Gui Huang ed.) *The Thesis Collection of Taiwan Indigenous People's Society and Culture*. Linking Publishing Co., Taipei. p. 3.



among these peoples, scholars refer to these peoples in this area as the Austronesian peoples. The Austronesian area stretches from Easter Island in the East to Madagascar (on Eastern coast of Africa) in the West, and from Taiwan in the North to the area²⁹ between New Zealand, the Philippines, Malaysia, Indonesia, Papua New Guinea, etc., (but excluding Australia) in the South. The Austronesian peoples have a population of over two billion people around the world. The geographical distribution of this nation is broad, covering two thirds of the earth, and the people are generally island people. The Austronesian languages are different as well, with approximately one thousand Austronesian languages. This makes up approximately one sixth of the world's languages. Approximately three billion people inhabit this area. Taiwan has about 448,000 Austronesian people.³⁰ These are Taiwan's indigenous people.

Taiwan's written records of its indigenous peoples' history began approximately three centuries ago, mainly during the period of the Dutch rule. Thus, the history of Taiwan's indigenous peoples prior to this time was "prehistoric." From where did the indigenous peoples in Taiwan originate? No consistent answer exists at this time.³¹

Some scholars believe Taiwan's indigenous peoples originated in the area surrounding the Philippines, Borneo, and Eastern Indonesia, and that these peoples migrated North to Taiwan. This theory is the "Originating from the South" theory.³² Other scholars believe that Taiwan itself is the origin of the Austronesian peoples.

Still other scholars believe that Taiwan's indigenous peoples migrated from Southeastern Coast of China to Taiwan, or the "Originating from the Mainland Chinese Continent" theory.³³

Taiwan has 12 tribes of indigenous peoples. From North to South are the following tribes: Kavalan, Atayal, Truku, Saysiyat, Bunun, Thao, Tsou, Ami, Rukai, Puyuma, Tao (Yami), and Paiwan. Most of the tribes settled on both sides of the Central Mountain, such as the Atayal, Truku, Saysiyat, Bunun, Thao, Tsou, Rukai, and Paiwan. The Kavalan, Ami, Puyuma, and Tao settled on the coast or plains. Prior to

²⁹ Jian, H.C. (簡後聰) 2003 *Taiwan History*. Wu Nan Publ., Taipei. p.70.

³⁰ See at <http://www.apc.gov.tw/official/>.

³¹ Lee, G. G. (李壬癸) 1999 *History of Taiwan Indigenous People: Language*. The Historical Research Commission of Taiwan Province, Taichung.

³² Id.

³³ Id.



the creation of Taiwan's modern communication and transportation infrastructure, most tribes did not communicate with each other due to great distances and inconvenient transportation.

1.2.1 Special Characteristics

1.2.1.1 Oral Transmission

In indigenous peoples' gatherings, the elder of the tribe often tells tribal tradition to successive generations, while noting the factual reliability of this oral transmission. People use language to communicate. Oral transmission plays an important role in passing on tribal culture, cultural restrictions, and tribal knowledge. Tribes can pass down, by oral transmission, folk tales, history, experiences, and TK.

1.2.1.2 Closed Societies

Over 4 centuries ago, Taiwan had many tribes. These tribes shared culture, wisdom, and experiences with other tribes. These tribes lived in harmony with the land and its characteristics, and adapted to its conditions and its life forms. Each tribe had its specific domain and territory, and restricted others from entering. Moreover, each tribe had its own social system, such as certain clans of the Tsou and Bunun, the chieftain or aristocrat social classes of the Rukai and Paiwan, the matriarchal society and youth office system of the Puyuma and Ami, and the fishing group system of the Tao.

1.2.1.3 Primitive Lifestyles

In the past, Taiwan's indigenous peoples spent a great deal of time migrating and searching for locations to develop a tribe. Each tribe considered its agriculture, hunting, and fishing needs, in order to create a life in which the tribe could coexist with the land, mountains, and rivers. In agriculture, the indigenous peoples used lading, rotation, and fallow techniques to maintain a balance with the environment, to make the most efficient use of the land. The indigenous peoples cultivated basic staples, such as millet, taro, sweet potato, and rice in a traditional way, despite the hardships of the environment, to supply food to the people.

Hunting demonstrates the intellectual nature of the indigenous peoples. The Tsou and Bunun have a technique for making leather; the Ami and Atayal have a technique for preserving meat or fish. Hunting has significance beyond providing food. Hunting also has significance in rites and ceremonies, whether or not religious,



and hunting helps to stabilize the relationships in the tribe. After a successful hunt, a hunter distributes the take in a certain order to everyone in the tribe, not just to the hunter's family, and everyone must follow this order.

1.2.1.4 Living in Harmony with Nature

Indigenous peoples have humble and thankful attitudes toward nature. In every aspect, indigenous peoples try to coexist with nature and learn from nature. Tribes located in high mountainous regions follow basic hunting rules,³⁴ showing taboos and rules for that specific region. For example, paths connecting to the outside will definitely follow the terrain. The tribes will not destroy the environment for convenience but make the best of the environment. On the other hand, as for exalting the power of nature, the indigenous peoples show how the behavior of human beings pleases or displeases the spirits, to teach tribesmen about the changes of nature and to regulate the behavior of the tribesmen.

However, due to the asymmetry of power of the invaders and cross-cultural contacts over the past 400 years, Taiwan has witnessed the destruction of the TK of Taiwan's indigenous peoples and of their social structures that had endured for thousands of years. For example, people have abandoned ecologically sound agricultural practices such as slash-and-burn cultivation. Modern agricultural technologies and powerful agricultural machines in the mountainous areas is one of the reasons why severe landslides occur very frequently in recent years in the areas where indigenous peoples live.

2. Current protection of TK in Taiwan

Although TK is very abundant around Taiwan, Taiwan has no special laws concerning the protection of TK. As such, TK protection in Taiwan is in its beginning stages. The following section discusses the main types of protection of TK in Taiwan.

2.1 Research and establishment of TK databases in Taiwan

Although Western naturalists visited Taiwan before 1900, the Japanese were the first to take intensive ethnological and ethnobiological studies. They began in the beginning of the 1900s. During the fifty years of the Japanese rule of Taiwan, these researchers published a great deal of their research and monographs. However,

³⁴ For example, Atayal tribal hunting rule, so called "GAGA".



these studies are by no means extensive. Since the 1945, intensive ethnological and ethnobiological studies have been scarce. In recent years, however, research into these fields has started to revive.

2.1.1 Ethnobotany

Many anthropologists and botanists conducted research concerning ethnology during the Japanese Occupation. Anthropologists Torii Ryuzo (鳥居龍藏, 1898) and Ino Kanori (伊能嘉矩, 1899) were among the most recognized. Anthropology periodicals published most of their researches, but related botanical studies did not begin until 1911. Ethnobotanists such as Yaichi Shimada (島田彌市), Sasaki Syuniti (佐佐木舜一), and Yamada Kinji (山田金治) were among the most famous. Periodicals such as Taiwan's Mountains and Forests (台灣的山林), Tropical Horticulture (熱帶園藝), and compilations of the Taiwan Forestry Research Institute published some of these botanical researches.

In recent years, a few academic and non-professionals devoted researches to indigenous usage of plants. Current research in Taiwan includes the following categories:

2.1.1.1 *Field observation*

The groundwork of field observation is to record systematically the usage of plants by or between different tribes. However, the push to expedite plant recording and the failure to understand local culture may result only in a list of plants uses of each tribe, which fails to take into account the full importance of the TK associated with this plant. Nevertheless, some results are promising. For example, Han-Wen Zheng published more than two hundred plant species that the Tao (of Orchid Island) use.³⁵ Moreover, Chiung-Shi Liu recorded 207 plant species that the Rukai use.³⁶

2.1.1.2 *Quantitative ethnobotany*

These kinds of study began in the middle of the 1980s, mainly by quantifying data.³⁷ Wang *et al.* focused on the Tao's usage of mountain forests, coastal forests,

³⁵ Zheng, Han-Wen (鄭漢文) 1996 Vulgar plants of the Tao. *Eastern Taiwan Study*, no. 1, p. 67-104.

³⁶ Liu, Chiung-Shi (劉炯錫) 2000 Investigation on traditionally useful plants of Taromak tribe of the Rukai, Taitung. *Bulletin of National Taitung Normal College*, 11: 29-60.

³⁷ Wen-Chao Chang (張汶肇) 2003 Study on the Ethnobotany of Seediq Atayal in Nantou, Master Thesis, Graduate Institute of Horticulture, National Taiwan University, Taipei.



and growing plants in Lanyu.³⁸ Huang examined the plant use habits of the Atayal tribe, especially investigating uses of forest plants.³⁹

2.1.1.3 *Experimental ethnobotany research*

This method is based on field observation, focusing on how those plants were used as medicines, foods, insect repellants, aromas, and dyes.⁴⁰ For example, He and Hsu (2000) recorded the names of plants used as dye, studied the dyeing techniques of the Ami tribe of Hualien, and conducted dyeing experiments based on field observations.⁴¹

2.1.1.4 *Applied ethnobotany*

This field of research is to integrate experiences about how local residents use plants and manage natural resources through regional investigation. For example, works had been done to develop new products (arts and crafts, edible plants, etc.), natural resource management, ecological tourism, medicine/health, plant protection, and cultural protection.⁴²

2.1.1.5 *Establishing Databases*⁴³

The first author of this article conducted a complete survey of the Table of Contents section of each journal published in Taiwan during Japanese ruling era (1895 to 1945) and held in the archives of National Taiwan University, the Taiwan Forestry Research Institute, and the Taiwan Agricultural Research Institute. Twenty one articles concerning ethnobotanical research had been selected. We also took a look at post-WWII studies (1945 to 2000), and found 24 articles concerning plant uses of the indigenous peoples.

According to our survey, Taiwanese indigenous peoples have used about 700 plants species. We created a database through Microsoft Access. The database

³⁸ Wang, [Hs/Sh]jiang-Hua (王相華), Jeng, Han-Wen and Pan, Fu-Yi (潘富俊) 2000 Plant usage of [the] Yami tribe, p. 228-248.

³⁹ Huang, Shih-Yen (黃詩硯) 2003 Study on Ethnobotany and Vegetation Utilization in Cinsbu, Atayal. Master Thesis, Graduate Institute of Botany, National Taiwan University, Taipei.

⁴⁰ See supra note 35.

⁴¹ Id.

⁴² Huang, Chi-Reng 2000 Distinction in the Amis' Market: An Alternative Ethnobotany. Master Thesis, Institute of Ethnic Relation and Culture, National Dong-Hwa University, Hualien.

⁴³ <http://tk.agron.ntu.edu.tw/ethnobot/DB1.htm>



has several fields (i.e., commonly-accepted names, synonyms, common names, plant family, indigenous tribes, use, and description). As for use we have classified them by use: as food, as spice, as salt replacement, as medicine, for chewing, for teeth-dyeing, for dyeing generally, for cleaning, for wine-making, for decoration, for fish-poisoning, for construction, for boat-making, for use as a container, for use as fabric, etc. People can use this database to conduct searches in Chinese.

The database contains several categories concerning plant species (i.e., accepted names, synonyms, common names, plant family, indigenous tribes associated with this plant, use, and description). The plants have been classified by use as food, as spice, as salt replacement, as medicine, for chewing, for teeth-dyeing, for dyeing generally, for cleaning, for wine-making, for decoration, for fish-poisoning, for construction, for boat-making, for use as a container, for use as fabric, etc.

2.2 New regulations

Taiwan has no law providing clear protection of TK, and only existing laws provide some protection to TK. Current legal protections include: (1) patent law, (2) the plant variety protection, (3) trade secret law, (4) trademark law. Recent amendments to the trademark law concern geographical indications. As long as the area's TK has certain features or qualities, people may use geographical indicators on a product or service.

2.3 Bills for new legislation

In the year 2000, the Council of Indigenous Affairs under Taiwan's Executive Yuan made a new bill concerning the protection of indigenous peoples' folklore to prevent the disappearance of the TK of Taiwan's indigenous peoples. This bill promotes the protection of expressions of folklore. In 2002, the Executive Yuan passed this bill, but the Legislative Yuan has yet to complete the required three readings for this bill to become law in Taiwan.

2.4 Infringed cases

2.4.1 Use of a Performance without permission

In 1998, lawyers for Difang (Chinese name Ying-nan Kuo) and his wife Igay (Chinese name Hsiu-chu Kuo), an indigenous couple of the Ami tribe, filed a copyright infringement suit in the United States against the German pop music group Enigma, related US and German record companies, as well as the International Olympic



Committee (IOC).

The couple claimed that Enigma, Virgin Records (Germany), Capitol-EMI Music, Charisma Records of America, Mambo Music (Germany) and the IOC failed to give the Ami couple credit for the use of their voices in Enigma's hit song, "Return to Innocence."

The song contains extended portions of the Ami couple performance of their tribe's "Jubilant Drinking Song."

The Ami couple (both vocalists from the Ami tribe of Eastern Taiwan) sang the "Jubilant Drinking Song" (an important song in Ami celebrations) in Paris in 1988, when the couple was members of a Taiwan mission taking part in a cultural exchange program sponsored by the French Ministry of Culture and Education.

French musicians heard the Ami couple's rendition of the song, a tune passed down from generation to generation among the Ami, and a French museum included their singing on a CD released later that year of Taiwan indigenous music.

The Ami couple were surprised when they learned that their song had been appropriated for Enigma's 1994 pop song "Return to Innocence," and was being used by the IOC in its promotion of the 1996 Summer Olympic Games in Atlanta since the Ami couple did not know of or authorize these uses of the song. The song, boosted by the connection with the Olympics sold millions of copies worldwide.

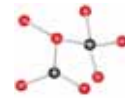
The Ami couple was puzzled that they were not given any recognition for the Enigma recording.

In the end, this case was settled out of court. The defendants agreed to recognize the couple in future releases, and awarded the couple two platinum albums in respect of their contributions.⁴⁴

2.4.2 Using without Permission

In 1990, the Paiwan brought a copyright infringement case against the manufacturer of bags that copied the sacred symbols of the tribe. However, since books introducing the indigenous peoples had already shown these sacred symbols,

⁴⁴ Huang, S.L. (黃秀蘭) 1999 The Copyright infringement case of the "Joyously Drinking Song" of Mr. In-Nan Kuo. Outline in "Taiwan Indigenous People cultural property" Seminar handbook, Taipei.



the judge found the items lacking original creation and found the defendant not liable for copyright infringement.⁴⁵

3. Significant problems Taiwan may face in protecting TK

In Taiwan, certain difficulties may arise in determining the ownership of rights, especially concerning the TK of indigenous peoples. Although traditionally every tribe had its own living space, the boundaries are no longer very clear, since today different tribes often intermarry and live together. Therefore, determining the ownership of TK is difficult with respect to the TK of indigenous peoples.

Indigenous peoples have a unique social structure and decision-making structure by which indigenous peoples decide how to exercise power (for example, through the decisions of the chiefs or leaders). However, with the assimilation of indigenous peoples with non-indigenous peoples, the traditional decision-making power structure of indigenous peoples is rapidly disappearing. Local decision-making (by an elected majority) varies from that of the indigenous tribes. At times, the tribes may lack adequate representation on in local decision-making bodies. As such, the local decision-making body may not fully consider the tribe's interests.

When the interests of the nation and the community conflict, which interests take priority? Taiwan currently has no related regulations concerning this matter. If the "sovereign rights of states" theory prevails, where the nation has power to make decisions, in cases of conflict of interests between the state and the local community, the interests of the state will prevail, and the interests of the local community will fail. On the other hand, if "the interests of the local community" theory prevails, this position may affect, or even harm, the interests of the majority. This is a problem which Taiwan's government must consider.

The above are the difficulties that Taiwan may face in protecting TK. Therefore, considering whether current legislation adequately protects TK, and ways to solve related problems, is important to providing more effective protection of TK.

IV. Future Directions (Conclusion)

TK is often historical, as it is knowledge through man's interaction with the environment. Compared to scientific knowledge, TK focuses on connections

⁴⁵ Judgment No. 2183, 2000, Taiwan High Court Kaohsiung Branch Court.



between entire systems, and modifications over time. Different forms of TK require different kinds of protection. This is to say, TK related to natural resources or technology requires a different type of protection from TK related to cultural arts.

Nevertheless, the protection of traditional knowledge, regardless of whether the TK relates to natural resources or technology or cultural arts, protection should be both holistic and individual. Holistic protection focuses on ecological conservation and natural resource rights. Individual protection focuses on cultural rights. In this way, one can avoid placing traditional knowledge into the intellectual property rights scheme, thereby providing TK only fragmentary protection. As for individual protection, one has to determine whether to provide TK holders IP protection, to avoid situations where TK owners have no rights to claim damages in cases of misappropriation or infringement. In summary, holistic protection is to ensure that the subject of the TK does not suffer damage, while individual protection is to ensure that the owner has a way to receive compensation in cases of misappropriation or infringement. Still, the purpose and use of these protection methods (holistic protection and individual protection) are quite different.

Actually, countries can consider protecting TK with such a system as the above (preventing access), in addition to the IP system (allowing rights and remedies). When these two systems (IP, plus local communities' consent to conduct bio-prospecting) work together, protection of TK is more thorough.

Moreover, TK is not static, but dynamic, constantly changing with the times. While protecting TK is important, so too is protecting the innovations of indigenous peoples. For example, if inventions based on TK meet the requirements of novelty, inventive step, and industrially applicability, patent protection for these inventions is appropriate. If the protection is not individual, it emphasizes protection of national or local resources, while ignoring the fruits of individuals' labor.⁴⁶ Holistic protection alone is inadequate.

Database protection is an important way to protect TK. Still, it is important for the database operator to allow the TK holder to control access to such TK. Providing indigenous peoples and societies more opportunities to control access to TK through database protection is important, as this helps in further developing: the concept of

⁴⁶ Gupta, A.K. 2004 Rewarding Traditional Knowledge and Contemporary Grassroots Creativity: The Role of Intellectual Property Protection.
http://sustsci.harvard.edu/ists/TWAS_0202/gupta_0500.pdf



trust through practical initiatives with a view to providing indigenous and local communities with increased opportunities to exercise control over their TK held in databases may warrant further consideration. Collaborative efforts with research institutions, national authorities, NGOs, etc., as well the establishment of database trusts by local communities, and indigenous peoples, may offer innovative means for both promoting and protecting TK⁴⁷.

As for defensive protection of TK, when needing to disclose confidential information, one must make every effort to protect TK under the IP system from misappropriation or from unauthorized use. In the long term, a defensive protection system may prove to be a more cost-effective system of protection of TK, avoiding the frequent question of patent infringement and the excessive costs of patent examination⁴⁸.

As for IP protection of TK, IP Protection of TK almost invariably results in fragmentary protection of TK, but without more comprehensive rights for the protection of TK, IP protection still remains an important method of protection of TK.

In summary, TK protection still has many areas that require investigation. Currently, this investigation is very preliminary. More research toward finding the best way to provide TK more thorough protection is needed.

⁴⁷ Tobin, B. 2004 *The Role of Registers and Databases in the Protection of Traditional Knowledge: A Comparative Analysis*. United Nations University / Institute of Advanced Studies (UNU/IAS), Tokyo. p. 39,
<http://www.ias.unu.edu/publications/details.cfm/articleID/459>.

⁴⁸ *Id.*, p. 30.