

Fighting Biopiracy: The Legislative Protection of Traditional Knowledge

Javier Garcia*

INTRODUCTION

Biotech and pharmaceutical companies have made enormous strides in contributing to modern medicine in recent years; nevertheless, diseases like cancer, diabetes, heart disease, and HIV continue to kill millions of people every year.¹ Pharmaceutical companies continue to search for desperately needed cures, but are faced with an ever more pressing question – where to look? After focusing on man-made compounds in the 1990s, many companies have realized the answer may lie in the “complexity and diversity of natural products [that] can’t be matched by even the most innovative human scientist.”² While the pharmaceutical industry may have been slow to discover the potential of natural compounds, indigenous communities around the globe have been using natural remedies for centuries.³ These remedies have adapted over time to the changing needs of the community, adding to the medicinal knowledge of these natural products.⁴ These discoveries are part of a body of knowledge termed “traditional knowledge.”

Traditional knowledge has the potential to earn billions.⁵ Recognizing this potential, pharmaceutical companies have invested millions in ‘bio-prospecting,’ a process by which companies dispatch researchers to search for biological source material and active compounds that can be turned into a commercial product.⁶ One

* B.A., University of Redlands; J.D., Gonzaga University School of Law. The author is an associate attorney at Perkins Coie LLP in Seattle, Washington. A special thanks to Bertha and Mara for their love and support. The author would also like to thank Sheri Engelken for her guidance and expertise.

1. Claudia Kalb, *Pharmacy Island*, NEWSWEEK, Summer 2005, at 54.

2. *Id.*

3. See Marcia E. DeGeer, *Biopiracy: The Appropriation of Indigenous Peoples’ Cultural Knowledge*, 9 NEW ENG. J. INT’L & COMP. L. ANN. 179, 180 (2003) (“Indigenous Peoples have been cultivating and improving their local plant life for centuries.”); see also Sumathi Subbiah, *Reaping What They Sow: The Basmati Rice Controversy and Strategies for Protecting Traditional Knowledge*, 27 B.C. INT’L & COMP. L. REV. 529, 544 (2004) (“Traditional knowledge develops incrementally from generation to generation.”).

4. Subbiah, *supra* note 3, at 543-44; see also Kathleen Bender, *North and South: The WTO, TRIPS, and the Scourge of Biopiracy*, 11 TULSA J. COMP. & INT’L L. 281, 290 (2003) (Traditional knowledge is a “body of knowledge built by a group of people through generations living in close contact with nature.”).

5. Gavin Stenton, *Biopiracy within the Pharmaceutical Industry: A Stark Illustration of How Abusive, Manipulative and Perverse the Patenting Process can be Towards Countries of the South*, 26 E.I.P.R. 17, 17 (2004) (noting the existence of a market for herbal medicines is estimated at \$43 billion, with an annual growth rate between 5-15%).

6. DeGeer, *supra* note 3, at 180; see also David Confronto, *Traditional and Modern-Day Biopiracy: Redefining the Biopiracy Debate*, 19 J. ENVTL. L. & LITIG. 357, 359 (2004) (“Biotechnology

place the biotech industry has found particularly ripe for bio-prospecting is Mexico. Mexico is appealing for several reasons: it remains underdeveloped, contains numerous indigenous communities, and is considered a biodiversity “goldmine” as it contains 34 of the 36 identifiable climates in the world.⁷

Countries with traditional knowledge like Mexico, however, need to take protective measures. Traditional knowledge’s largely undocumented history makes it particularly vulnerable to bioprospectors who are searching for new products to patent. Traditional knowledge is often unrecorded in the databases regularly searched by patent application examiners.⁸ The novelty of traditional knowledge in the United States and elsewhere allows it to be patented with no compensation given to the actual inventors – a process known as “biopiracy.” If traditional knowledge were patentable, however, Mexico and other biodiverse countries could cash in on the enormous wealth generated by bio-prospecting.⁹ Mexico, in particular, could benefit from effective traditional knowledge protection because of its strong trade ties to the United States.¹⁰

Accordingly, the objective of this article is to develop a method to patent traditional knowledge and thereby compensate traditional knowledge holders in countries like Mexico. The goal is to propose a domestic legislative framework that countries with traditional knowledge and biodiversity can adopt to prevent the misappropriation of intellectual property rights, while providing incentives for bio-prospecting corporations.

Part I continues to introduce key definitions and examples of traditional knowledge and biopiracy. Part II provides an overview of the Mexican patent law system and examines its incompatibility with traditional knowledge. Part III explores the international patent system and exposes the loophole that allows bio-prospecting companies to patent traditional knowledge. Part IV then identifies additional problems in applying existing international patent law and United States patent law to traditional knowledge. Part V synthesizes the discussion by proposing domestic legislation as a solution to bring traditional knowledge into patent law framework.

companies . . . wish to freely ‘bioprospect’ the diverse ecosystems that characterize third world countries, hoping to develop and eventually sell a socially useful and highly lucrative product.”)

7. See DeGeer, *supra* note 3, at 200 (noting the biotechnological industry depends on Southern nations like Mexico that are resource rich and economically poor); see also United Nations Environment Programme (“UNEP”): GEO Latin American and the Caribbean, Environmental Outlook, 63-64 (2003), <http://earthwatch.unep.net/latinamerica/index.php> (“In Brazil, Columbia, Ecuador, Mexico, Peru, and Venezuela, 190,000 of the world’s 300,000 known vascular plants have been identified. These six countries are part of the group of nations that, worldwide, have been identified as having biological megadiversity; together they harbour between 60 to 70 percent of all forms of life. Their topography, climate variety, geology, and biology have contributed to a mosaic of many diverse small-scale environmental conditions that support a large variety of habitats and life forms.”).

8. See, e.g., 35 U.S.C. §§ 101, 102 (2000); see also Subbiah, *supra* note 3, at 545 (Traditional knowledge is “passed down orally and in practice from generation to generation and will not appear . . . on . . . limited [prior art] search[es].”); Confronto, *supra* note 6, at 364 (“[T]raditional knowledge is passed on by word of mouth and unlikely to be published.”).

9. See, e.g., DeGeer, *supra* note 3, at 200 (Mexico’s poverty stricken and resource-rich territory creates “an atmosphere whereby the Mexican government feels the need to open its borders to corporate investments.”).

10. See U.S. EMBASSY MEXICO CITY, OVERVIEW OF MEXICO’S INTELLECTUAL PROPERTY RIGHTS ENVIRONMENT (2005) (noting that bilateral trade between Mexico and the United States totals over \$167,000 billion per year).

I. DEFINITIONS AND EXAMPLES OF BIOPIRACY OF TRADITIONAL KNOWLEDGE

A. Traditional Knowledge

There is no universal definition of traditional knowledge; however, scholars typically define it either as knowledge developed by indigenous communities¹¹ or tradition-based intellectual activity.¹² Knowledge is tradition-based when it has been passed from generation to generation, constantly evolving to meet the changing needs of the people of a specific territory.¹³ Under these definitions, traditional knowledge is related to the cultural traditions of a community. It is held collectively by a community and not limited by any “specific field of technology.”¹⁴ Traditional knowledge therefore encompasses everything from plant cultivation to medicinal remedies to food recipes. Examples of traditional knowledge include the use of the *hoodia* cactus by the Kung Bushmen in Africa to stave off hunger, the use of the *turmeric* plant in India to heal wounds, the use of *j’oublie* in Cameroon and Gabon as a sweetener, and the use of ground roots in Mexico for removing teeth.¹⁵ Each natural product has its own method of preparation that has been developed from generation to generation within these communities. It is this specialized knowledge that is now sought by bioprospecting companies.

B. Biopiracy

Biopiracy is defined as the misappropriation of traditional knowledge of indigenous communities for the purpose of seeking exclusive patent ownership over the knowledge.¹⁶ Biopiracy is found in three forms, varying by the extent to which they are piratical.¹⁷

11. See Daniel Gervais, *Traditional Knowledge and Intellectual Property: A TRIPS-Compatible Approach*, MICH. ST. L. REV. 137, 140 (2005).

12. See Subbiah, *supra* note 3, at 531; WORLD INTELLECTUAL PROP. ORG., INTELLECTUAL PROPERTY NEEDS AND EXPECTATIONS OF TRADITIONAL KNOWLEDGE HOLDERS: WIPO REPORT ON FACT-FINDING MISSIONS ON INTELLECTUAL PROPERTY AND TRADITIONAL KNOWLEDGE (1998-1999), at 25 (Apr. 2001), <http://www.wipo.int/tk/en/tk/ffm/report/index.html> [herein after WIPO] (“[T]raditional knowledge’ comprises ‘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.’”).

13. *Id.* at 25 (“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 the changing environment.”).

14. Gervais, *supra* note 11, at 140-41.

15. 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 3 (2003); Gina Marie McAndrews, *Utilization of Medicinal Plant Species in the Zapotec Community of Yatzaehi el Bajo, Oaxaca, Mexico* (1995), shr.aas.org/tek/handbook/handbook.pdf.

16. Stenton, *supra* note 5, at 17 (defining biopiracy as “the appropriation of the knowledge and genetic resources of farming and indigenous communities by individuals or institutions seeking exclusive monopoly control over these resources and knowledge”).

17. *Id.* at 23.

i. Bio-prospecting

The least piratical form of biopiracy is bio-prospecting. Bio-prospecting has been defined as the process by which someone discovers an unknown plant or organism.¹⁸ After discovery, scientists conduct further research into the plant or organism that often leads to the discovery of unknown properties. Controversy surrounding bio-prospecting arises when these discoveries include traditional knowledge and are manipulated to make them patentable.

ii. Discovery of Unknown Properties in Known Plants and Organisms

The second type of biopiracy involves properties discovered in known plants and organisms that are slightly different from the regular species, and therefore, patentable.¹⁹ The story behind the enola bean patent provides an example of this type of biopiracy. In 1999, the United States Patent Office (“USPO”) granted a Colorado man, Larry Proctor, a patent after he claimed he had developed a new field bean variety that produces distinctly colored yellow seed which remains relatively unchanged by season.²⁰ In fact, Proctor achieved his “invention” by simply purchasing some beans in a market in Mexico and planting them in Colorado.²¹ When self-pollinated and harvested three times, the resulting enola bean remains yellow in color from season to season.²² The USPO granted the patent for developing the bean in a new color, but it was challenged by the International Center for Tropical Agriculture (“ICTA”).²³ The USPO initially upheld the patent, concluding that color was enough to meet the novelty requirement for a patent.²⁴ Critics argued the invention was obvious, however, since the inventive process consisted simply of intensively breeding the seeds.²⁵ After a renewed challenge by the ICTA, in April 2008, the USPO rejected all of the patent claims associated with the enola bean.

iii. Exploitation of Traditional Knowledge

The third and most piratical type of biopiracy is the exploitation of traditional knowledge.”²⁶ The pozol patent represents an instance of when traditional

18. *Id.*

19. *Id.* at 23 (defining “the discovery of unknown properties in an already known plant or organism, which demonstrates some progression from a mere raw material although the steps involved are usually not profound but nevertheless are subject to patentability”).

20. U.S. Patent No. 5,894,079 (issued Apr. 13, 1999).

21. US Patent Office Rejects Company’s Claim for Bean Commonly Grown by Latin American Farmers, http://www.eurekalert.org/pub_releases/2008-04/bc-upo043008.php (last visited Oct. 5, 2008).

22. *Id.*

23. Requests for Reexamination, U.S. Patent No. 5,894,079 (issued Apr. 13, 1999), <http://www.uspto.gov/web/offices/com/sol/og/2001/week03/patrequ.htm> (upheld Jan. 16, 2001); US Patent Office Rejects Company’s Claim for Bean Commonly Grown by Latin American Farmers, http://www.eurekalert.org/pub_releases/2008-04/bc-upo043008.php (last visited Oct. 5, 2008).

24. U.S. Patent No. 5,894,079 (issued Apr. 13, 1999).

25. Erin Donovan, *Beans, Beans, The Patented Fruit: The Growing International Conflict over the Ownership of Life*, 25 LOY. L.A. INT’L & COMP. L. REV. 117, 126-27 (2002).

26. Stenton, *supra* note 5, at 23.

knowledge has been exploited.²⁷ Pozol is a fermented Mexican drink, invented by the Mayan people centuries ago. The health-promoting and antibacterial properties of pozol led a Dutch corporation and the University of Minnesota to extract bacillus subtilis from pozol to use as a natural inhibitor of unwanted flora in foods and feeds.²⁸ A patent was issued to the parties, but they did not compensate the Mayan community for the invention of their ancestors.²⁹ Consequently, critics argue that the patenting of the isolated microorganism, which is the active component, rather than the drink itself, constituted an exploitation of traditional knowledge.³⁰ Indigenous communities have since demanded the Mexican government adopt anti-prospecting legislation to protect traditional knowledge like pozol.³¹

A project conducted by the International Collaborative Biodiversity Group-Maya ("ICBG-Maya") provides another example of when traditional knowledge has been subjected to exploitation.³² In September of 1998, a United States government initiative, including the National Institute of Health, the National Science Foundation, and the United States Department of Agriculture, approved a \$2.5 million grant for a project entitled Drug Discovery and Biodiversity among the Maya in Mexico.³³ The project was aimed at extracting Mayan knowledge and resources in an effort to patent any discoveries of pharmaceutical products. Project leaders included the University of Georgia, Colegio de la Frontera Sur, Mexico, and Molecular Nature Limited, a Welsh biotechnology company. The Mexican Department of the Environment, National Resources, and Fishing halted the project, however, due to the lack of existing legislation and regulations to regulate the extraction of genetic resources in Mexico.³⁴ The Mexican legislature is currently attempting to establish regulations to allow the extraction of biodiversity in Mexico, while preventing the misappropriation of intellectual property rights.³⁵ Nevertheless, the ICBG is reported to have collected 1,000-1,500 distinct botanical species and almost "200 distinct formulae from knowledgeable Maya collaborators" before the Mexican government halted the project.³⁶

These incidents demonstrate why Mexico and other biodiverse nations should adopt legislation to protect traditional knowledge. Under current patent law, traditional knowledge is subject to exploitation and the actual inventors receive no compensation.

27. U.S. Patent No. 5,919,695 (issued July 6, 1999).

28. DeGeer, *supra* note 3, at 201.

29. *See id.*; U.S. Patent No. 5,919,695 (issued July 6, 1999).

30. DeGeer, *supra* note 3, at 201.

31. *See id.*

32. *See* Sivashree Sundaram, *Battling Bills, Beans & Biopiracy*, 15 ALB. L.J. SCI. & TECH. 545, 568 (2005); *see also* RURAL ADVANCEMENT FOUNDATION INTERNATIONAL, STOP BIOPIRACY IN MEXICO!, Oct. 23, 2000, http://www.etcgroup.org/en/materials/publications.html?pub_id=304; Charles R. McMannis, *Intellectual Property, Genetic Resources and Traditional Knowledge Protection: Thinking Globally, Acting Locally*, 11 CARDOZO J. INT'L & COMP. L. 547, 570 (2003) (discussing another ICBG project in Peru).

33. *See* Sundaram, *supra* note 32, at 568-70.

34. RURAL ADVANCEMENT FOUNDATION INTERNATIONAL, STOP BIOPIRACY IN MEXICO!, Oct. 23, 2000, http://www.etcgroup.org/en/materials/publications.html?pub_id=304.

35. *Id.*

36. *Id.*

II. MEXICAN PATENT LAW

The Mexican Institute of Industrial Property is the agency that administers patent law in Mexico.³⁷ Patent law in Mexico is currently governed by Ley de la Propiedad Industrial (Law of Industrial Property), a decree adopted by the Mexican Congress in 1991.³⁸ Mexican patent applications must comply with international standards established by the TRIPS agreement.³⁹

A. Mexican Patent Requirements

The Mexican requirements for a patent are laid out in Title 2, Chapter 2, Article 16 of the decree.⁴⁰ The provision states that inventions shall be patentable if they are new, the result of an inventive activity, and susceptible to industrial application.⁴¹ The requirement that an invention be new is established in article 17 and 18 of the Mexican Law of Industrial Property. To determine whether an invention is new and the result of an inventive activity, the invention is compared to the "prior art" at the time the patent application is presented.⁴² Prior art encompasses the technical state of all previously documented patents in Mexico. Under Article 16, for a patent to be considered susceptible to industrial application, the invention must advance technology in any industry.⁴³ Article 16 expressly excludes from patent consideration, however, certain categories of material, including: essential biological processes for the production, reproduction, and propagation of plants and animals; genetic and biological material found in nature; animals; the human body or living body parts; and vegetable varieties.⁴⁴

B. Mexican Patent Law and Traditional Knowledge

Although traditional knowledge holders are afforded some protection under current Mexican patent law, administrative obstacles stand in the way. First, traditional knowledge may be considered old and unpatentable. Under Mexican

37. Ley de La Propiedad Industrial [L.P.I.] [Law of Industrial Property], *as amended*, tit. 1, ch. 1, art. 6, Diario Oficial de la Federación [D.O.], 27 de Junio 1991 (Mex.) [hereinafter L.P.I.].

38. *Id.*

39. *Compare id.* at art. 16 (requiring that patents in Mexico be granted to inventions that are new, the result of an inventive activity, and susceptible to industrial application), *with* Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, Annex 1C, Legal Instruments-Results of the Uruguay Round, vol. 31, 33 I.L.M. 81 (1994) [hereinafter TRIPS Agreement], art. 27 ("The TRIPS Agreement provides that patents shall be granted for inventions that are "new, involve an inventive step, and are capable of industrial application."); The TRIPS Agreement came into effect on January 1, 1995; *see also* VANDANA SHIVA, *BIOPIRACY: THE PLUNDER OF NATURE AND KNOWLEDGE* 81 (1997) (The agreement was adopted in order to internationally protect intellectual property rights and encourage trade. The agreement was conceived and shaped by the Intellectual Property Committee (IPC), Keidanren, and the Union of Industrial Employees Confederation (UNICE). The IPC is comprised of twelve major U.S. corporations: Bristol Myers, DuPont, General Electric, General Motors, Hewlett Packard, IBM, Johnson & Johnson, Merck, Monsanto, Pfizer, Rockwell, and Warner. Keidanren is an economic federation of Japanese organizations.).

40. L.P.I., *supra* note 37, at tit. 2, ch. 2, art. 16.

41. *Id.*

42. *Id.* at art. 17.

43. *See id.*; *see also* Gervais, *supra* note 11, at 152 ("Industrial applicability is linked to a commercial or industrial application.").

44. L.P.I., *supra* note 37, at tit. 2, ch. 2, art. 16.

patent law, all inventors must apply for patent protection within one year of inventing the idea.⁴⁵ Traditional knowledge, however, is generally passed down from generation to generation and was “invented” centuries ago.⁴⁶ This prevents most traditional knowledge in Mexico from ever achieving patent protection, while allowing bio-prospecting companies to import the knowledge to jurisdictions where it is considered novel.

Second, Article 59 of the Mexican Law of Industrial Property prevents traditional knowledge holders from applying for patents if they do not know the specific name of the inventor.⁴⁷ Naming a specific inventor of traditional knowledge is generally difficult because the original inventor may not be known. Moreover, because traditional knowledge is passed from generation to generation, traditional knowledge holders have difficulty proving that a member of their community was the first to invent the product.⁴⁸

Third, the Mexican Institute of Industrial Property issues intellectual protection rights only to individuals, not communities.⁴⁹ However, many members of a tribe may have contributed to traditional knowledge,⁵⁰ which is commonly held collectively by a community, not an individual.⁵¹ And even if an individual were granted a patent, the profits generated from a patent could potentially disrupt the social structure of an indigenous community.⁵²

The standards established under Mexican patent law for patentability thus fail to protect the intellectual property rights of traditional knowledge holders. The Mexican government has recognized the need to protect domestically invented knowledge, but the current requirements limit access to patent protection.⁵³ Traditional knowledge holders need access to patents or other forms of protection to prevent the exploitation of traditional knowledge. The problem calls for domestic legislation that is recognized and respected by the international community. Accordingly, Part III analyzes international patent standards and exposes the loophole that allows bio-prospecting companies to patent traditional knowledge in foreign countries.

45. Article 18 of the Mexican Law of Industrial Property requires that inventors apply for patents within twelve months of inventing the idea, putting the invention into practice, or disclosing the invention at a national exhibition.

46. Degreer, *supra* note 3, at 184.

47. L.P.I., *supra* note 37, at tit. 2, ch. 5, art. 59 (Article 59 requires the Mexican Institute of Industrial Property to issue a title which serves as a record and official recognition for each patent to the entitled party. The title is required to include an exemplary description and include: a) name and classification of patent; b) name and domicile of the person(s) to receive the record; c) name of inventor(s); d) date the petition was presented, any recognized priority, and expedition; e) Denomination of the invention; f) its force.); *see also* DeGeer, *supra* note 3, at 184; Bender, *supra* note 4, at 292 (“Traditional knowledge is recorded and transmitted through oral tradition.”); Subbiah, *supra* note 3, at 545; Confronto, *supra* note 6, at 364.

48. Gelvina Rodriguez Stevenson, *Trade Secrets: The Secret to Protecting Indigenous Ethnobiological (Medicinal) Knowledge*, 32 N.Y.U. J. INT’L L. & POL. 1119, 1141 (2000).

49. L.P.I., *supra* note 37, at tit. 2, ch. 5, art. 59.

50. Stevenson, *supra* note 48, at 1141.

51. Gervais, *supra* note 11, at 140.

52. Stevenson, *supra* note 48, at 1141 (describing deep division amongst a Brazilian indigenous community after compensation was awarded to the chief for natural hair conditioner).

53. RURAL ADVANCEMENT FOUNDATION INTERNATIONAL, STOP BIOPIRACY IN MEXICO!, Oct. 23, 2000, http://www.etcgroup.org/en/materials/publications.html?pub_id=304 (The Mexican government halted project ICBG-Maya to establish legislation that regulates bio-prospecting in Mexico.)

III. INTERNATIONAL PATENT STANDARDS

International patent standards set critical parameters for states' patent legislation in the face of increased world trade and globalization.⁵⁴ The parameters are intended to ensure that domestically adopted patent legislation does not become a barrier to legitimate trade.⁵⁵ International patent standards have been enforced by the Paris Convention since 1883.⁵⁶ There are currently 172 contracting parties to the Paris Convention, including the United States and Mexico.⁵⁷ The objective of the convention was to allow member states to adopt their own patent protections and conditions, while establishing basic uniform intellectual property standards that apply throughout the international community.⁵⁸

Traditional knowledge is afforded no protection under current international patent standards.⁵⁹ Under the current standards, anyone can patent traditional knowledge without providing any financial compensation to the actual inventors.⁶⁰ The lack of documentation of traditional knowledge has created a loophole under international patent standards. Because traditional knowledge is "new" to the countries where it is imported, foreign patent applicants can obtain patents on traditional knowledge while domestic indigenous applicants cannot.⁶¹ These circumstances make the adoption of domestic legislation necessary, given that international patent standards aggravate the exploitation of traditional knowledge, rather than prevent it.

A. *The TRIPS Agreement*

The treaty agreement on Trade-Related Aspects of Intellectual Property Rights ("TRIPS")⁶² is a product of the World Trade Organization ("WTO"), an organization established by industrialized nations to promote free trade under a global trading system.⁶³ The objective of TRIPS is to encourage the constant

54. DeGeer, *supra* note 3, at 192.

55. *Id.*

56. Paris Convention For the Protection of Industrial Property, Mar. 20, 1883, 13 U.S.T. 2, 828 U.N.T.S. 107.

57. WIPO, *Treaties Database, Contracting Parties*, http://www.wipo.int/treaties/en/ShowResults.jsp?lang=en&treaty_id=2 (last visited Oct. 6, 2008).

58. JOHN F. MURPHY & ALAN C. SWAN, *CASES AND MATERIALS ON THE REGULATION OF INTERNATIONAL BUSINESS AND ECONOMIC RELATIONS* 190 (1999); *see also* DeGeer, *supra* note 3, at 195-96 (Important principles of international law the Paris Convention is responsible for enforcing are: 1) the "right of priority," which gives the owner of a patent priority over any other patent application for the identical invention in another state party to the Paris Convention; 2) the national treatment doctrine which requires member states to treat foreign nationals with the same rights as their own.); Bender, *supra* note 3, at 287 (Three basic principles were established by the Paris Convention: 1) national treatment; 2) right of priority; 3) uniformity of recognized international patent standards.).

59. *See* DeGeer, *supra* note 3, at 202.

60. *See supra* discussion on Exploitation of Traditional Knowledge.

61. *See, e.g.*, 35 U.S.C. § 102; *see also* TRIPS Agreement, *supra* note 39, at art. 34 (allowing member states to provide the burden of proof for the "new" requirement); Symposium, *Panel II: The Law and Policy of Protecting Folklore, Traditional Knowledge, and Genetic Resources*, 12 *FORDHAM INTELL. PROP. MEDIA & ENT. L.J.* 753, 776-77 (2002) (India, Peru, the Philippines, and Canada have developed initiatives to document and register traditional knowledge in databases to prevent exploitation.).

62. TRIPS Agreement, *supra* note 39.

63. Bender, *supra* note 4, at 282.

evolution of ideas by providing ample protection to intellectual property rights owners and rewarding their innovativeness and ingenuity.⁶⁴ The TRIPS agreement is recognized as an “impressive” document for its “comprehensive scope and coverage,” leading some to recognize it as the “most important multilateral instrument in this field.”⁶⁵ Unlike the Paris Convention, the TRIPS agreement created uniform patent standards, which is considered one of its most significant improvements over the Paris model.⁶⁶ Additionally, as part of the WTO, the TRIPS agreement is tailored to the needs of industrialized nations; this puts pressure on developing countries that wish to conduct trade with these nations to conform to TRIPS standards.⁶⁷

Article 27 of the TRIPS agreement lays out the requirements for patentability.⁶⁸ Paragraph (1) of article 27 states that “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.”⁶⁹ A footnote to article 27 clarifies that member states may interpret “inventive step” and “capable of industrial application” to refer to the more familiar patent terminology of “non-obvious” and “useful.”⁷⁰ These broad standards establish “a general principle of eligibility” for patents.⁷¹

B. *The TRIPS Agreement and Traditional Knowledge*

Despite creating many uniform standards, the TRIPS agreement fails to protect traditional knowledge because it does not establish a universal rule for novelty.⁷² This allows countries to adopt their own standards of novelty and prior art.⁷³ Accordingly, countries typically take an ethnocentric approach to determining novelty and issue patents for “inventions” that may be common in another country.⁷⁴ Moreover, because traditional knowledge is still generally transferred by oral tradition, it is not found in printed publications that patent examiners look to during prior art searches, and is thus considered novel and patentable.⁷⁵ Therefore, to traditional knowledge holders, the TRIPS agreement, like the Paris Convention, fails

64. *Id.* at 308 (noting the “objective of the agreement is to give adequate and effective protection to intellectual property rights, so that the owners of these rights receive the benefits of their creativity and inventiveness, and are thereby also encouraged to continue their efforts to create and invent”).

65. GERVAIS, *THE TRIPS AGREEMENT: DRAFTING HISTORY AND ANALYSIS* 220 (2d ed. 2003).

66. *Id.*

67. *See* Bender, *supra* note 4, at 282.

68. TRIPS Agreement, *supra* note 39, at art. 27.

69. *Id.* at ¶ 1.

70. *Id.* at n.5 (It is important to note that the translations of “inventive step” and “industrial application” to “non-obvious” and “useful,” respectively, are consistent with United States requirements under 35 U.S.C. §§ 101, 103 (2000).).

71. GERVAIS, *supra* note 65, at 221.

72. *Id.*

73. *See, e.g.*, L.P.I., *supra* note 37, at tit. 2, ch. 2, art. 17 (establishing prior art in Mexico).

74. *See id.* (noting that inventions are compared to all previously issued patents to determine if they are “new”); *see also* U.S. Patent No. 5,894,079 (issued Apr. 13, 1999) (an argument could be made that the Enola bean was well known in Mexico and foreign in the U.S. and thus patentable); *In re Bergstrom*, 427 F.2d 1394, 1401 (C.C.P.A. 1970).

75. *See, e.g.*, L.P.I., *supra* note 37, at tit. 2, ch. 2, art. 17.

to provide patent protection largely by granting too much discretion to individual states in shaping their own domestic patent law.⁷⁶

C. United States Patent Law

An overview of United States patent law is compulsory given its impact on international patent standards.⁷⁷ Additionally, the strength of United States patent protections has led many foreigners to patent in the United States.⁷⁸ The United States Patent Act requires an inventor to meet three conditions when applying for a patent: (1) novelty, (2) non-obviousness, and (3) utility.⁷⁹ Each of these requirements is analyzed below.

The novelty requirement of the United State Patent Act is presented in section 101 and 102.⁸⁰ Section 101 requires that the invention be “new,” while section 102 requires the invention be “novel.”⁸¹ However, case law has established that section 102 encompasses section 101; thus, if an invention satisfies the novelty requirement, the new requirement is also met.⁸²

The novelty requirement is generally met unless the invention is patented or depicted in a publication in the United States or a foreign country.⁸³ To determine novelty, patent examiners inquire into the current state of the art as a basis for comparison.⁸⁴ This is done by comparing the invention to other patents and publications under section 102, including any evidence of uses or sales of the invention within the United States; the sum of these references is considered “prior art.”⁸⁵ Once prior art is established, an inquiry is made to determine whether the invention described in a patent application is indistinguishable from any of the prior art references.⁸⁶ If the purported invention is identical to any one of those prior art references, it lacks novelty and no patent will be issued.⁸⁷

The United States Patent Act also requires that inventions or discoveries be non-obvious.⁸⁸ As with section 102, prior art is also used to determine if an

76. See GERVAIS, *supra* note 65, at 220.

77. Bender, *supra* note 4, at 282.

78. R. Carl Moy, *The History of the Patent Harmonization Treaty: Economic Self-Interest as an Influence*, 26 J. MARSHALL L. REV. 457, 491 (1993) (“United States patent laws provide patent owners with some of the strongest patent rights in existence. The United States currently grants 45% of its patents to foreigners.”).

79. 35 U.S.C. §§ 101-103.

80. 35 U.S.C. §§ 101, 102.

81. *Id.*

82. See *In re Bergstrom*, 427 F.2d 1394, 1401 (C.C.P.A. 1970).

83. 35 U.S.C. § 102(a). As discussed *infra*, the lack of documentation on traditional knowledge that would turn up in a novelty search provides the loophole that allows it to be patented in the United States. Although a patent can be denied to an applicant if the applicant is not the person who invented the subject matter under §102(f), case law has weakened this provision. *Cf. Gayler v. Wilder*, 51 U.S. 477 (1850) (holding applicant may patent invention discovered by someone else if that person is deemed to have abandoned it and noting applicant deserves credit for putting discovery in our possession).

84. See 35 U.S.C. § 102(a).

85. ROGER E. SCHECTER & JOHN R. THOMAS, *PRINCIPLES OF PATENT LAW: CONCISE HORNBOOK SERIES 1*, 74 (2004).

86. *Id.*

87. *Id.*

88. 35 U.S.C. § 103.

invention is obvious.⁸⁹ Prior art is used to determine if an invention is obvious to a person skilled in the art.⁹⁰ If so, the invention is obvious and unpatentable.⁹¹ The theory behind this requirement is to ensure that an invention is a significant technical advancement worthy of a patent.⁹² Consequently, while an invention may be novel or useful, it is only awarded a patent if it is more than a mere trivial change to the prior art.⁹³

The final requirement to obtain a patent on an invention is utility.⁹⁴ This requires only a “minimal showing” that an invention is useful.⁹⁵ Under such a low threshold, a patent applicant need only show that an invention has some “conceivable use.”⁹⁶ The enola patent discussed above, granted because of the bean’s distinctive yellow color, is a great example of the low utility threshold.⁹⁷ To be denied a patent due to lack of usefulness an invention must be generally illegal or immoral.⁹⁸

The strength of United States patent law lies in the protection it affords to patent holders.⁹⁹ This protection is backed by both the economic power of the United States and the influence it has on international trade,¹⁰⁰ which typically produces favorable international treaties.¹⁰¹ Both factors have forced Mexico to tailor its patent laws to terms comparable to United States patent requirements.¹⁰²

D. United States Patent Law and Traditional Knowledge

A major criticism of United States patent law is its ethnocentric nature. Critics argue that United States patent law “waters down the novelty requirement . . . [by] patenting inventions known or used in foreign countries, as long as the invention has not been patented or disclosed in a printed publication.”¹⁰³ This

89. SCHECTER & THOMAS, *supra* note 85, at 151.

90. *Id.*

91. *See id.*

92. Kristin Connam, *Section 103(B): Obviously Unnecessary?*, 5 HIGH TECH. L.J. 287 (2005).

93. *Id.*

94. 35 U.S.C. § 101.

95. SCHECTER & THOMAS, *supra* note 85, at 61 (citing *Mitchell v. Tilgman*, 86 U.S. 287, 396 (1873)).

96. *Confronto*, *supra* note 6, at 366; *see, e.g.*, Enola patent, U.S. Patent No. 5,894,079 (issued Apr. 13, 1999) (The United States Patent Office granted a patent for a bean simply because it was yellow in color from season to season.).

97. Enola patent, U.S. Patent No. 5,894,079 (issued Apr. 13, 1999).

98. *Confronto*, *supra* note 6, at 366 (citing Leanne M. Fecteau, Note, *The Ayahuasca Patent Revocation: Raising Questions about the Current U.S. Patent Policy*, 21 B.C. THIRD WORLD L.J. 69, 76-77 (2001)); *see, e.g.*, Enola patent, U.S. Patent No. 5,894,079 (issued Apr. 13, 1999).

99. Every patent granted in the United States is documented on the United States Patent and Trademark Office website and subject to any “prior art” search, thus, preventing the issuance of a patent for the same invention in any other country. *See* United States Patent and Trademark Office, <http://uspto.gov/main/patents.htm> (last visited Nov. 11, 2008).

100. Bender, *supra* note 4, at 282 (noting that “the international intellectual property system . . . has been shaped largely by the United States”).

101. *See id.* (“The World Trade Organization dominates all international trade, and has been tailored by the industrialized countries.”).

102. Peter J. Knudsen, *NAFTA’s Impact on Rights and Remedies Under U.S. Patent Law*, 7 N.Y. INT’L L. REV. 1, 3 (1994).

103. *Confronto*, *supra* note 6, at 364; 35 U.S.C. § 102(a); an argument could be made that every country establishes its own standard of novelty, however, it is American corporations that are seeking foreign knowledge to patent in the United States. *See* discussion *supra* on The Exploitation of

creates the prior art loophole that allows the patenting of traditional knowledge in the United States. Under these circumstances, all undocumented traditional knowledge is subject to exploitation in the United States.¹⁰⁴ Scholars have noted that United States patent law does not incentivize genuine scientific breakthroughs because it rewards the corporation “that confirms a discovery rather than the innovator who actually makes the discovery.”¹⁰⁵ This system “merely rewards the party who confirms a prior discovery, manipulates its properties for the purposes of manufacturing and large-scale distribution, and markets the ‘new’ product to consumers.”¹⁰⁶

As illustrated above, Mexican, international, and United States patent laws offer little protection to traditional knowledge holders.¹⁰⁷ All three systems conform to the same basic requirements, and thus, all three allow the exploitation of traditional knowledge through the prior art loophole. Since traditional knowledge tends to be undocumented, it will likely not appear in printed publication searches, and therefore, anyone other than traditional knowledge practitioners can meet the “new” requirement of all three systems and patent traditional knowledge.¹⁰⁸ To better understand the obstacles traditional knowledge faces under current patent laws, Part IV collectively analyzes barriers found in all three systems.

IV. BARRIERS IMPOSED BY PATENT LAWS ON TRADITIONAL KNOWLEDGE

Traditional knowledge holders face evidentiary, substantive, administrative, and cultural barriers under current international, United States, and Mexican patent regimes.¹⁰⁹

A. Evidentiary Barriers

The evidentiary issues posed by current patent law constitute traditional knowledge’s primary external barrier. Evidentiary barriers arise during the application process for a patent in attempting to pinpoint the date the knowledge originated.¹¹⁰ If a traditional knowledge holder does not know when the key

Traditional Knowledge.

104. See Confronto, *supra* note 6, at 364.

105. *Id.*

106. *Id.*

107. See *id.*; compare L.P.I., *supra* note 37, at tit.2, ch. 2, art. 16 (requiring that patents in Mexico be granted to inventions that are new, the result of an inventive activity, and susceptible to industrial application), with TRIPS Agreement, *supra* note 39, at art. 27 (The TRIPS Agreement provides that patents shall be granted for inventions that are “new, involve an inventive step, and are capable of industrial application.”); see also Knudsen, *supra* note 102, at 3 (“Mexican law provides for patents with terms comparable to United States patent laws” which require novelty, non-obvious, and usefulness.); Under these patent requirement standards, traditional knowledge may be patented by any person in a patent law system that only researches documented “prior art.”

108. The fact traditional knowledge is undocumented allows it to be considered “new” under current patent law regimes. See DeGeer, *supra* note 3, at 184; Bender, *supra* note 4, at 292 (“Traditional knowledge is recorded and transmitted through oral tradition.”); Subbiah, *supra* note 3, at 545; Confronto, *supra* note 6, at 364.

109. Subbiah, *supra* note 3, at 542–43.

110. *Id.* at 543–44 (noting that traditional knowledge may have no clear moment of innovation); see, e.g., L.P.I., *supra* note 37, at tit. 2, ch. 2, art. 16.

breakthrough occurred in developing the knowledge, it does not qualify for patent protection.¹¹¹ Moreover, because traditional knowledge develops over generations, no one date can be pinpointed as the “original” date of invention.¹¹²

Another evidentiary obstacle traditional knowledge faces stems from the concept of “prior art.” Traditional knowledge is typically undocumented, thus it fails to be recognized as “prior art” to prevent another party from patenting the same knowledge.¹¹³ For example, traditional knowledge may be considered common in a foreign region and still be patentable in the United States, because the United States patent office will likely be unable to find documentation of its existence.¹¹⁴ Two factors exacerbate this problem. First, the United States patent office conducts extremely limited prior art searches.¹¹⁵ Second, patent applicants do not have a duty to conduct their own prior art searches.¹¹⁶ These obstacles, common to most patent law systems, must be overcome to prevent the exploitation of traditional knowledge and allow indigenous communities to receive some sort of compensation for the knowledge their community has invented and developed over generations.

B. Substantive Barriers

Traditional knowledge also faces substantive barriers under current patent law given its nature of origin. Inventiveness is currently treated as an “isolated, individualized achievement of an identifiable inventor,” compared to traditional knowledge which is often collectively owned and produced by natives of a specific territory.¹¹⁷ Moreover, traditional knowledge is developed as a response to the needs of the community, thus, “individual innovators” are not always apparent.¹¹⁸ Consequently, identifying individual inventors may be contradictory to community norms or lead to conflict among community members.¹¹⁹

C. Administrative Barriers

The patent granting process itself poses an administrative barrier on traditional knowledge.¹²⁰ First, traditional knowledge holders typically do not

111. Subbiah, *supra* note 3, at 543-44.

112. *Id.*

113. *Id.* at 544; Confronto, *supra* note 6, at 364; Bender, *supra* note 4, at 292; *see, e.g.*, 35 U.S.C. § 102(a) (establishing a prior art).

114. Subbiah, *supra* note 3, at 544; Confronto, *supra* note 6, at 364; Bender, *supra* note 3, at 292.

115. *See* Thomas Schneck, *The Duty to Search*, 87 J. PAT. & TRADEMARK OFF. SOC'Y 689, 694 (2005) (“The problem is that patent examiners spend a total of 18 hours in examining a patent application . . . [u]nder such time constraints, the best prior art is easily missed leading to invalid patents.”).

116. *See, e.g.*, *American Hoist & Derrick Co. v. Sowa & Sons, Inc.*, 725 F.2d 1350, 1362 (Fed. Cir.) (“Nor does an applicant for a patent, who has no duty to conduct a prior art search, have an obligation to disclose any art of which . . . he ‘reasonably should be aware.’”), *cert. denied*, 469 U.S. 821 (1984).

117. Subbiah, *supra* note 3, at 543.

118. *Id.*

119. *Id.*; *see also* Stevenson, *supra* note 48, at 1142 (describing deep division amongst a Brazilian indigenous community after compensation was awarded to the chief for providing a natural oil used in hair conditioner to a British company for sale).

120. Subbiah, *supra* note 3, at 546.

possess the financial resources necessary to complete the patent application process.¹²¹ Second, patent applications must be written in familiar patent terminology, whereas traditional knowledge holders often have “more fluid and less overtly technical” customs of describing their knowledge.¹²² Requiring traditional knowledge holders to describe their knowledge in the “language of chemistry or molecular biology” makes it almost impossible to acquire a patent.¹²³ Consequently, companies that can develop a synthetic version of the compound or a purified extract of the traditional knowledge have a distinct advantage over indigenous communities.¹²⁴

D. Cultural Barriers

Another impediment traditional knowledge faces in patent law stems from the internal values and beliefs of each community.¹²⁵ Some cultures are known to believe that they are the temporary keepers of nature’s inventions which have evolved over millions of years.¹²⁶ For example, Native Hawaiians regard their traditional knowledge as “deeply personal and spiritual,” and not subject to ownership.¹²⁷ Developments made to traditional knowledge over time are seen as “co-creations” and “co-developments,” as opposed to inventions.¹²⁸ Some traditional knowledge holders believe all life has spirit and is equal to human life, making any claim of private ownership of biodiversity an illogical proposition.¹²⁹ Traditional knowledge holders may also face cultural challenges in the concept of individually owning an idea.¹³⁰ Given the wide variety of structures of indigenous communities,

121. *Id.*; DeGeer, *supra* note 3, at 181.

122. Subbiah, *supra* note 3, at 546.

123. Graham Dufield, *Trips-Related Aspects of Traditional Knowledge*, 33 CASE W. RES. J. INT’L L. 233, 255 (2001).

124. *Id.*

125. See Global Exchange, *Biopiracy: A New Threat to Indigenous Rights and Culture in Mexico*, <http://globalexchange.org/countries/americas/mexico/biopiracyReport.html.pf> (last visited Oct. 6, 2008) (noting that “traditional values and lifestyle are rooted in communal living, shared resources, and the interdependence of all living things, [thus] patenting . . . is an anathema to the value system upon which their culture is based”); see also DeGeer, *supra* note 3, at 181 (Indigenous communities are not culturally motivated to patent knowledge for profit.); Bender, *supra* note 4, at 292 (Private ownership is a foreign concept to indigenous communities since they believe “all life forms have kinship and are interdependent.”); Subbiah, *supra* note 3, at 532 (The value of traditional knowledge to indigenous cultures and communities is greater than individual ownership.).

126. Bender, *supra* note 4, at 294 (citing VANDANA, SHIVA, *BIOPIRACY: THE PLUNDER OF NATURE AND KNOWLEDGE* (1997)) (Indigenous societies tend to believe their knowledge is a “product of nature [that has] developed over millions of years, and realize that they are merely a custodian of nature’s gifts.”).

127. Danielle Conway-Jones, *Safeguarding Hawaiian Traditional Knowledge and Cultural Heritage: Supporting the Right to Self-Determination and Preventing the Co-modification of Culture*, 48 HOW. L.J. 737, 745-46 (2005); see also Stevenson, *supra* note 48, at 1141 (describing deep division amongst a Brazilian indigenous community after the chief was awarded compensation when he sold a community resource to a British company).

128. Bender, *supra* note 4, at 294.

129. *Id.*

130. See Global Exchange, *Biopiracy: A New Threat to Indigenous Rights and Culture in Mexico*, <http://globalexchange.org/countries/americas/mexico/biopiracyReport.html.pf> (last visited Oct. 6, 2008) (noting that “traditional values and lifestyle are rooted in communal living, shared resources, and the interdependence of all living things, [thus] patenting . . . is an anathema to the value system upon which their culture is based”).

traditional knowledge holders may face adversity in claiming ownership rights over a particular resource.¹³¹ Ownership rights may be a foreign concept or contradictory to the values of the respective communal society.¹³²

The protections indigenous communities generally seek are not permitted under current patent law systems.¹³³ For example, indigenous communities typically seek protections that limit access to, and control over traditional knowledge, including the right to say “no” to the disclosure of traditional knowledge or the right to demand compensation rights whenever its use is authorized.¹³⁴

The cultural barriers traditional knowledge holders face will have to be overcome in order to attain intellectual property rights in their knowledge. The modification of intellectual property rights to recognize communal ownership may encourage traditional knowledge holders to sacrifice cultural mandates in an effort to avoid exploitation. Ultimately, to receive patent protection, however, traditional knowledge holders will have to adapt their cultural norms to some degree.¹³⁵

The existing patent law regimes thus present indigenous communities with a diverse array of exterior and interior obstacles that must be addressed before traditional knowledge can receive patent protection. In order for traditional knowledge to overcome these obstacles and survive, both the patent law systems and traditional knowledge holders will have to adapt to each other. Part V proposes how patent law might better adapt to traditional knowledge.

V. PROPOSAL: DOMESTIC LEGISLATION TO BRING TRADITIONAL KNOWLEDGE INTO A PATENT LAW FRAMEWORK

The above discussion demonstrates that patent law in its current form is unequipped to protect the intellectual property rights of traditional knowledge holders. The incompatibility of the two systems is benefiting those who “discover” traditional knowledge rather than invent it – and leaving the real innovators without any protection or compensation.

The adoption of domestic legislation can prevent the exploitation of traditional knowledge in Mexico and countries around the world. Domestic legislation offers several advantages. First, developing countries can sidestep the dominant international players they would need to engage to modify current international patent law standards under the TRIPS agreement. The United States, the most influential nation in the development of international patent law, has no incentive to alter the current framework to protect traditional knowledge.¹³⁶ Under the current patent system, American corporations and individuals are free to extract

131. *Id.*

132. *See id.*

133. Gervais, *supra* note 11, at 141-42 (noting the “type of acts that indigenous communities want to prevent are not necessarily those that propertization provides.” For example, the right to exclude or prohibit others from using the knowledge altogether.)

134. VALUING LOCAL KNOWLEDGE: INDIGENOUS PEOPLE AND INTELLECTUAL PROPERTY RIGHTS 27-28 (Stephen B. Brush & Doreen Stabinsky eds., 1996).

135. It may be as simple as recognizing that patent protections can only be granted for a specific period of time.

136. Bender, *supra* note 4, at 282.

traditional knowledge from developing countries and patent it without giving any compensation to the inventing indigenous community.

Second, the adoption of domestic legislation establishes jurisdiction, regulations, and, most importantly, a lever of control over biotech corporations seeking to extract valuable resources. Third, domestic legislation would establish a means of documentation to defend against other patent applicants and better protect traditional knowledge.¹³⁷ Finally, domestic legislation allows the legislature of a country to develop and tailor its laws to protect the unique needs of their own traditional knowledge-holding indigenous communities. The solutions that have been previously proposed to protect traditional knowledge are too ideological and dependant on actors currently benefiting from the incompatibility. These solutions include boycotting products that have been misappropriated from indigenous communities,¹³⁸ using the Peace Corps to gather and document traditional knowledge,¹³⁹ calling upon the United States to bring about change,¹⁴⁰ or amending the TRIPS agreement.¹⁴¹

An effective solution begins with the recognition of traditional knowledge as intellectual property.¹⁴² Legislation that treats traditional knowledge as legitimate intellectual property will be recognized under the TRIPS agreement. To be effective, domestic legislation can and must be adopted with existing international standards in mind. Article 8 of the TRIPS agreement permits members to formulate and amend their own laws and regulations to protect and promote the public interest in areas of vital importance to socio-economic and technological development.¹⁴³ Additionally, the TRIPS agreement allows the adoption of appropriate measures, consistent with the provisions of the TRIPS agreement, necessary to prevent the abuse of intellectual property rights.¹⁴⁴ As stated in the proposed text below, the legislation will be subject to the rights and obligations contained in the TRIPS agreement as required of all members of the agreement.¹⁴⁵ Moreover, the proposal is tailored to protect and

137. See 35 U.S.C. § 102(a); L.P.I., *supra* note 37, at tit. 2, ch. 2, art. 17. By documenting traditional knowledge and making it accessible to patent examiners, traditional knowledge holders will establish a prior art, thus, barring patent applicants seeking to patent traditional knowledge due to their lack of novelty.

138. See Confronto, *supra* note 6, at 394.

139. *Id.* at 392-93.

140. *Id.* at 389 (“As the leader of the industrial world, the United States should amend the TRIPS Agreement to require companies that obtain patents based on traditional knowledge to enter into a mandatory contract guaranteeing specific, non-waivable rights to the developing nations from which the resource originated.”).

141. DeGeer, *supra* note 3, at 203-04 (proposing a solution that would grant traditional knowledge the same protection as trade secrets); Subbiah, *supra* note 3, at 546-47 (proposing a solution under the TRIPS Agreement that involves geographical indications similar to the ones afforded to wine and spirits); TRIPS Agreement, *supra* note 39, at art. 22.1 (The TRIPS Agreement provides that “geographical indications are . . . 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.”).

142. Gervais, *supra* note 11, at 160 (noting that an acknowledgement is necessary to establish that intellectual property rights “can and do apply without any modification to certain forms of traditional knowledge, especially knowledge that is exploited commercially”).

143. TRIPS agreement, *supra* note 39, at art. 8.

144. *Id.*

145. See *infra* Legislative Protection of Traditional Knowledge (Proposed Text).

promote the intellectual property rights of traditional knowledge holders,¹⁴⁶ and the protection of traditional knowledge is of vital importance to socio-economic and technological development of every country containing traditional knowledge.¹⁴⁷ Accordingly, the proposed legislation would comply with the provisions of Article 8 of the TRIPS agreement.

In the proposal below, Part A presents traditional knowledge-protecting legislation. This legislation can be modified to meet the various needs of traditional knowledge holders. Part B addresses the documentation of traditional knowledge to close the current “prior art” loophole that allows non-inventors to patent traditional knowledge.¹⁴⁸ Part C proposes a “catch-all” traditional knowledge *sui generis* right to establish compatibility with international patent law. Finally, the proposal concludes in Part D with a dispute resolution process to address conflicts between the domestic and international frameworks.

*A. Legislative Protection of Traditional Knowledge (Proposed Text)*¹⁴⁹

Chapter I: Acknowledgement

Section 1: In support of technical cooperation efforts, as well as further research and development into the application of current intellectual property rights to traditional knowledge;¹⁵⁰ the State recognizes that as WTO members, we are subject to existing rights and obligations, free to protect traditional knowledge above and beyond the protection for objects of intellectual property rights contained in the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), subject to rights and obligations contained in that Agreement.¹⁵¹

Section 2: The State, here and now, adopts private and public measures to meet the needs of traditional knowledge holders to avoid the exploitation of indigenous and genetic resources; and to foster the adequate transfer of technologies developed on the basis of such resources.¹⁵²

Section 3: The State shall recognize the applicability of customary laws governing property rights or relations in determining the ownership¹⁵³ of traditional knowledge and consult the appropriate fora on the implementation of appropriate benefit-sharing obligations.¹⁵⁴

146. TRIPS agreement, *supra* note 39, at art. 8.

147. *See id.*

148. *See, e.g.*, Confronto, *supra* note 6, at 363-64; Subbiah, *supra* note 3, at 545.

149. Similar text has been adopted in the Philippines. *See* An Act to Recognize, Protect and Promote the Rights of Indigenous Cultural Communities/Indigenous People, Creating a National Commission of Indigenous People, Establishing, Implementing Mechanisms, Appropriating Funds therefore, and for other Purposes, Rep. Act No. 8371, § 2(b) (1997) (Phil.) [hereinafter The Indigenous Peoples Rights Act of 1997].

150. *See supra* Acknowledgement.

151. *See* TRIPS Agreement, *supra* note 39, at art. 8 (The TRIPS Agreement allows the adoption of appropriate measures, consistent with the obligations of the TRIPS Agreement, needed to protect vital interests.)

152. This section puts into force the private and public measures needed to protect intellectual property rights of traditional knowledge holders.

153. The Indigenous Peoples Rights Act of 1997, *supra* note 149, at § 2(b).

154. Gervais, *supra* note 11, at 149 (noting that the TRIPS agreement does not prohibit community ownership).

Section 4: The State shall preserve, protect, and develop the past, present, and future manifestations of traditional knowledge, as well as the right to restitution of traditional knowledge taken without informed consent or in violation of community laws, traditions, and customs.¹⁵⁵

Section 5: Traditional knowledge holding communities shall be entitled to the recognition of full ownership and control and protection of their traditional knowledge in accordance with the patent laws of this State.¹⁵⁶

Chapter II: Documentation

Section 6: The State shall undertake to develop the appropriate databases and printed publications¹⁵⁷ of traditional knowledge, as well as standards for the development of such databases that ensure interconnectivity (interoperability) where appropriate and subject to the application of TRIPS Article 39.3.¹⁵⁸ [U]sing available databases and means, the State shall undertake to provide adequate tools to the search of “prior art” originating from traditional knowledge sources in the examination of relevant patent applications.¹⁵⁹

Chapter III: National Commission for the Protection of Traditional Knowledge¹⁶⁰

Section 7: Under this legislation, the State shall implement a commission to carry out the policies set forth herein and respond to the needs of traditional knowledge holders.¹⁶¹ The commission shall lobby for legislation that regulates

155. The Indigenous Peoples Rights Act of 1997, *supra* note 149, at § 32.

156. *Id.* at § 34.

157. A printed publication will allow traditional knowledge to be found in prior art searches conducted by the patent offices around the world. *See, e.g.*, 35 U.S.C. § 102(a) (granting a patent unless the “invention was . . . described in a printed publication in this or a foreign country.”) (emphasis added).

158. TRIPS Agreement, *supra* note 39, at art. 39.3 (permits the establishment of a database and allows members to withhold or disclose the data compiled as necessary to protect the public and prevent unfair commercial use); *see, e.g.*, Elizabeth Longacre, Note, *Advancing Science While Protecting Developing Countries from Exploitation of Their Resources and Knowledge*, 13 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 963, 1009 (2003) (observing that “the government of India formed a task force to create such a classification system for traditional Indian medicine”); Symposium, *Panel II: The Law and Policy of Protecting Folklore, Traditional Knowledge, and Genetic Resources*, 12 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 753, 776-77 (2002) (“[W]idely acclaimed traditional knowledge registries and databases have already been developed under various initiatives in Peru, India, the Philippines, and Canada.”). India is . . . developing a Traditional Knowledge Digital Library (TKDL), intended to document and disclose traditional knowledge as a means of preventing biopiracy While the TKDL may serve to prevent biopiracy by assisting patent authorities in their analysis of prior art and the novelty and inventiveness requirements, the register must be carefully structured to avoid compromising other interests of indigenous peoples. Manuel Ruiz, Isabel Lapena & Susanna E. Clark, *The Protection of Traditional Knowledge in Peru: A Comparative Perspective*, 3 WASH. U. GLOBAL STUD. L. REV. 755, 764-65 (2004).

159. *See, e.g.*, 35 U.S.C. § 102(a). The establishment of a “prior art” for traditional knowledge will prevent fraudulent patent applicants from claiming traditional knowledge they are attempting to patent is new. This section establishes the documentation of the traditional knowledge to establish a prior art database and a public domain; both will prevent the misappropriation of traditional knowledge holders’ intellectual property rights.

160. *See* The Indigenous Peoples Rights Act of 1997, *supra* note 149, at § 38.

161. A commission must be created to overlook the implementation of the proposal. The

foreign identities in our sovereign territory, subjecting them to the State's authority to adjudicate disputes within its sovereign territory.¹⁶² The commission shall be responsible for preventing the exploitation of traditional knowledge and for allocating the appropriate financial compensation to traditional knowledge holders and/or their communities.¹⁶³ The commission shall be subject to the checks and balances of the dispute resolution mechanism if it fails to allocate the appropriate financial recognition to traditional knowledge holders or communities.¹⁶⁴

Section 8: *Mandate:* The commission shall protect and promote the intellectual property rights of indigenous communities in their traditional knowledge.

Section 9: *Composition:* The commission shall be an independent agency under the office of the President and shall be comprised of a commissioner representing each indigenous community.

Section 10: *Powers and Functions:* To accomplish its mandate, the commission shall have the following powers, jurisdiction, and function:¹⁶⁵

To serve as a primary government agency through which traditional knowledge holders can seek government assistance and through which such assistance may be extended;

To review and assess the conditions of traditional knowledge holders including existing laws and policies and to propose relevant laws and policies to address their needs;

To develop and implement policies, plans, programs, and projects for the economic, social, and cultural development of traditional knowledge;

To submit to Congress appropriate legislative proposals intended to carry out the policies under this Act;¹⁶⁶

To promulgate the necessary rules and regulations for the implementation of this Act;¹⁶⁷ and

To establish and serve as a tribunal for the determination of intellectual property rights of indigenous communities.

commission must consist of government officials and members of the indigenous community.

162. Taking into consideration the needs of indigenous communities, the commission will draft legislation tailored to the needs of indigenous communities, while establishing jurisdiction to adjudicate the intellectual property rights of indigenous communities.

163. Perhaps the most critical and difficult task will be the allocation of financial gains of traditional knowledge, specifically amongst indigenous communities wishing to spread financial gains amongst the community inventor(s) in accordance with the recognized community standards of ownership. This will require a commission that resists the temptation of corruption and is willing to allocate the financial resources properly. Furthermore, if government corruption does prevent indigenous communities from receiving adequate compensation for their traditional knowledge, at this point in time, it may be the lesser of two evils. Currently, traditional knowledge is being extracted and commercialized by foreign pharmaceutical companies without any compensation to the inventor(s). Under domestic legislation, pharmaceutical companies could be forced to compensate, to some degree, the inventing party. All compensation will likely have to pass through the hands of corrupt governmental officials and funds will likely be confiscated; however, local government officials are somewhat more deserving than foreign corporations. Moreover, the chances of the money being spent within the country are higher if it is in the hands of corrupt, local government officials.

164. A checks and balances system will force the commission to distribute financial gains properly. Any violation will have to be brought to the attention of the dispute commission tribunal by the representatives of the indigenous community who sit on the commission.

165. See, e.g., The Indigenous Peoples Rights Act of 1997, *supra* note 149, at § 44.

166. See, e.g., *id.* at § 44(k).

167. See, e.g., *id.* at § 44(o).

Section 11: Transparency: Subject to all limitations required by law, all official records, documents and papers pertaining to official acts, transactions or decisions shall be made accessible to the public.¹⁶⁸

This text must be a living document modified to meet the evolving needs of traditional knowledge-holding communities. It is meant to provide a starting point for countries that wish to protect the intellectual property rights of their traditional knowledge holders.

B. Documentation of Traditional Knowledge

The documentation of traditional knowledge is necessary to prevent its misappropriation.¹⁶⁹ Critics argue the documentation of traditional knowledge increases the risk of “unauthorized takings,” and suggest that the documentation of traditional knowledge will lead to its commercialization.¹⁷⁰ While this may prove true, documentation is the only way to prevent the exploitation of traditional knowledge.¹⁷¹

There are numerous ways to document traditional knowledge. One possibility is the organization of a team of five to ten members to meet with indigenous communities and record their knowledge as “common” or assist in the patenting of the knowledge if it is fairly new or is the result of a modification to existing traditional knowledge.¹⁷² Another option is to direct a public university to have students document traditional knowledge. Relying on the Peace Corps or a foreign entity to conduct the documentation, however, is unreasonable for several reasons. First, they can pick and choose what they want to record. Second, there is too much at stake to rely on a foreign identity. Third, traditional knowledge holders will respond better to local officials, and thus, be more cooperative.

Whatever the method, documenting traditional knowledge will have to establish a “prior art” to prevent its misappropriation without just compensation by other patent applicants.¹⁷³ In order to do this, it will need to be accessible and understandable to patent offices around the world. In other words, successful documentation will have to be in English and accessible on the internet.¹⁷⁴ Although such requirements may be criticized as overly idealistic, they are necessary to protect traditional knowledge.

168. See, e.g., *id.* at § 45.

169. Gervais, *supra* note 11, at 164 (Documentation is the only way to establish prior art and prevent patent applicants from claiming their invention is novel.).

170. See Symposium, *Panel II: The Law and Policy of Protecting Folklore, Traditional Knowledge, and Genetic Resources*, 12 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 753, 768-69 (2002); Manuel Ruiz, Isabel Lapena & Susanna E. Clark, *The Protection of Traditional Knowledge in Peru: A Comparative Perspective*, 3 WASH. U. GLOBAL STUD. L. REV. 755, 765 (2004) (“Systemizing [traditional knowledge] and placing it in the public domain, and the resulting increased availability of [traditional knowledge], may cause indigenous communities to lose control over [their traditional knowledge].”).

171. Gervais, *supra* note 11, at 164-65.

172. See, e.g., 35 U.S.C. § 102; L.P.I., *supra* note 37, at tit. 2, ch. 2, art. 17.

173. See, e.g., 35 U.S.C. § 102; L.P.I., *supra* note 37, at tit. 2, ch. 2, art. 17.

174. See, e.g., Confronto, *supra* note 6, at 392 (describing the tedious task of translation which can hamper the defense of an existing patent).

C. *The “Catch-all”: A Sui Generis Right to Establish Compatibility of Traditional Knowledge with International Patent Law*

The establishment of a *sui generis* right for holders of traditional knowledge would provide compensation for communities that do not otherwise qualify for patent protection. Under Article 8 of the TRIPS agreement, countries can adopt legislation to protect “sectors of vital importance to their socio-economic and technological development.”¹⁷⁵ A *sui generis* right could therefore be adopted in conjunction with domestic legislation as a catch-all provision pursuant to Article 8. The nature of a traditional knowledge *sui generis* right is detailed below.

i. Term of Protection

Establishing a *sui generis* right for traditional knowledge holders could resolve problems stemming from patent law’s limited term of protection.¹⁷⁶ Foremost among them is that certain forms of traditional knowledge may fall under the realm of public domain, and thus, be exempt from any patent protection.¹⁷⁷ Likewise, some traditional knowledge holders may also seek terms of protection that are incompatible with patent law, seek to prevent any sharing of their knowledge, or seek exclusive rights over their knowledge for an unlimited amount of time.¹⁷⁸ Such efforts would prove at odds with current patent law, which only rewards patent protection for a limited period of time to enable further innovations.¹⁷⁹ Although a *sui generis* right could address some of these concerns, traditional knowledge holders will likely have to make sacrifices to avoid the misappropriation of their intellectual property rights. For example, the documentation of traditional knowledge will ultimately submit any documented traditional knowledge to the public domain. This may prove contradictory to the values of some traditional knowledge holders who wish to maintain ownership and control of their knowledge forever; nonetheless, it is an adaptation that must be made to avoid the exploitation of traditional knowledge.

ii. Nature of Patent Ownership and Object

A traditional knowledge *sui generis* right could also overcome patent law’s relative incompatibility with communal ownership. Confronting this hurdle is necessary since it may be against communal customs for an individual to own knowledge developed and modified over many generations.¹⁸⁰ Recognition of a *sui*

175. See TRIPS Agreement, *supra* note 39, at part 1, art. 8 (“Members may, in formulating or amending their laws and regulations, adopt measures necessary to protect public health and nutrition, and to promote the public interest in sectors of vital importance to their socio-economic and technological development.”).

176. See, e.g., L.P.I., *supra* note 37, at tit. 2, ch. 2, art. 23 (noting that patent protection is granted for 20 years).

177. See DeGeer, *supra* note 3 (“Indigenous peoples have been ‘cultivating’ their crops for generations, these communities, their plants, and their cultural knowledge have been considered the public domain of anthropological study.”).

178. See Gervais, *supra* note 11, at 141-42.

179. Confronto, *supra* note 6, at 362 (noting the “goal of patent law is to promote advances in technology”).

180. Subbiah, *supra* note 3, at 543 (noting that “naming individual inventors, especially in

generis right could also overcome barriers posed by international patent standards that require that an invention be new and subject to industrial applicability.¹⁸¹

iii. Nature of Patent Rights

Finally, a *sui generis* right could modify patent law with respect to traditional knowledge holders to allow benefit sharing among communities not considered inventors under current patent law. For example, in 2004, the University of California, Berkeley, signed an agreement with the Samoan government to isolate from an indigenous tree the gene for a promising anti-AIDS drug and to share any royalties from sale of a gene-derived drug with the people of Samoa.¹⁸² The agreement, signed by the prime minister of Samoa and U.C. Berkeley's Vice Chancellor for research, allocates Samoa's fifty percent share to the government, villages, and the families of healers who first shared the knowledge of how to use the plant.¹⁸³ Under the agreement, any commercial developer must "first negotiate an equitable benefit-sharing agreement with Samoa."¹⁸⁴ This landmark agreement could be duplicated in Mexico under domestic legislation. Agreements like these may pose a problem given the amount of government corruption in Mexico and other developing countries.¹⁸⁵ Nevertheless, it may be the lesser of the two evils. Under domestic legislation or a *sui generis* right, compensation from patent royalties would be guaranteed at least to the State and would hopefully be spent in Mexico, rather than abroad. Furthermore, local government officials may be more entitled to compensation from profitable traditional knowledge than foreign, corporations.

D. Dispute Resolution Mechanism

An effective dispute resolution mechanism is necessary to make domestic legislation successful. First, it allows a country to establish jurisdiction over foreign companies that enter the country to extract resources. The mere existence of a dispute resolution process places foreign companies on notice that they are subject to jurisdiction and criminal or civil liability for violative conduct, such as environmental damage resulting from the excavation of resources, misappropriation of intellectual property rights, and civil rights violations. Currently, foreign companies are entering sovereign territories without permission, but governments do

agrarian communities where knowledge is shared, may be at odds with the community's ethic").

181. See, e.g., L.P.I., *supra* note 37, at tit. 2, ch. 3, art. 27 (requiring that inventions be susceptible to industrial application); see also Gervais, *supra* note 11, at 152 ("Industrial applicability is linked to commercial or industrial application.").

182. Kalb, *supra* note 1, at 54; U.S. Patent No. 5,599,839 (issued Feb. 4, 1997) (The traditional knowledge, known to Samoan healers to treat physical ailments, is a formula extracted from the small endemic trees of Samoa. The active component was patented in the United States as "prostratin" and is now used to combat AIDS.).

183. Eurekalert, Landmark Gene Agreement Announced by Samoan Government and U.C. Berkeley for Anti-AIDS Drug Prostratin, http://www.eurekalert.org/pub_releases/2004-09/ife-lga092904.php (last visited Oct. 6, 2008).

184. *Id.*

185. See U.S. EMBASSY MEXICO CITY, OVERVIEW OF MEXICO'S INTELLECTUAL PROPERTY RIGHTS ENVIRONMENT (2005) (noting the protection of intellectual property rights is complicated by Mexico's extensive poverty and corruption).

not have the legislation in place to regulate them effectively.¹⁸⁶ A dispute resolution mechanism will force entities to abide by the laws and regulations established by the proposed legislation.

The mechanism should provide a dispute resolution process for domestic conflicts and conflicts involving other sovereign states, thus requiring two levels of dispute-resolution.¹⁸⁷ The first level should be for States to resolve disputes.¹⁸⁸ The second level should provide a dispute-resolution mechanism for private parties who claim ownership of traditional knowledge, such as two tribal communities claiming ownership over the same traditional knowledge.¹⁸⁹ This level of dispute resolution will adjudicate intellectual property rights among all domestic entities, including indigenous communities, local inventors, corporations, or any other patent applicants claiming ownership of traditional knowledge.

CONCLUSION

The protection of traditional knowledge is vital to underdeveloped countries. Traditional knowledge is one of the few resources and bargaining chips these countries still retain. Accordingly, Mexico and other underdeveloped countries should protect themselves from the misappropriation of traditional knowledge that has already begun. Adopting domestic legislation provides the best means to regulate and control foreign entities seeking to extract and exploit traditional knowledge from vulnerable indigenous communities.

186. See, e.g., Sundaram, *supra* note 32, at 566-73; RURAL ADVANCEMENT FOUNDATION INTERNATIONAL, STOP BIOPIRACY IN MEXICO!, Oct. 23, 2000, available at http://www.etcgroup.org/en/materials/publications.html?pub_id=304; McMannis, *supra* note 32, at 570 (discussing another ICBG project in Peru).

187. Gervais, *supra* note 11, at 165.

188. *Id.* (for example, ICBG-Maya, where the U.S. funded projects to enter Mexico to extract traditional Mayan knowledge).

189. Gervais, *supra* note 11, at 165.

