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# Intellectual property rights and indigenous knowledge: a study of traditional medicine

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## Abstract

Information on ethnopharmacology is crucial for the development of both traditional healthcare systems and new health care system. Countries with a high level of biodiversity also the indigenous peoples who are familiar with the use of bio sources as medicines, and businesses looking to find novel treatments using traditional knowledge and medicinal plants have a lot in common. More people are becoming aware of the significance of plants as medicines, and the "intellectual property rights" (IPR) associated with their usage. The "Convention on Biological Diversity" (CBD), which was signed in Rio in 1992, mandates the preservation of the biological resources that serve as the cornerstone of all those health systems along with the protection of local people's rights and knowledge. Therefore, preserving the rights of local and indigenous people over their knowledge and resources is a crucial component of all modern conservation techniques. In India, patent systems generally provide protection for intellectual property rights, although most indigenous people do not have easy access to this legal method. This paper examines the current status of intellectual property protection for traditional medicine, especially the Indian systems like Jeevani; issue of innovation in these systems, and challenges and risks in patenting Trade Mark and concludes with suggestions for the way forward.

Keywords: Traditional Medicine, Intellectual Property Rights, Convention on Biological Diversity, indigenous people, Jeevani.

## Introduction and Background

The primary source for progress is generally recognized to be knowledge. Indigenous Knowledge (IK) is the foundational source of each country's knowledge system. IK, also known as traditional knowledge or local knowledge, includes the information, abilities, and viewpoint of people used to maintain or advance their standard of living. Indigenous peoples have evolved and maintained incredibly useful knowledge and behavioural patterns. For a variety of political and historical reasons, indigenous peoples frequently experience neglect and discrimination:

Many lack the legal right to live on the lands they depend on for survival or use the resources they have effectively managed to preserve and use for thousands of years; forced out of their lands into harsh environment where they find it challenging to grow enough food to eat, earn a living, receive education, and receive medical care.

Since the 1992 the Convention on Biological Diversity (CBD), traditional and indigenous knowledge (TK) has increased attention about its protection under intellectual property rights (IPRs). Academics, NGOs, and governments made numerous contributions that have taken into account to provide some kind of protection to their traditional Knowledge. However, there are major differences over whether IPRs should be used and, what would be the justification and methods of protection. It is not unforeseen that since the beginning of civilization,

people have learnt to treat variety of illnesses using plants and products produced from plants, maybe by learning from animals or by experiments, which led to the development of several homemade medicines. Traditional progress commonly takes on such customs, which are frequently upheld by local medicine men. According to approximate from the World Health Organisation (WHO), the majority of people in the of developing countries still count on traditional medical practises for daily healthcare. Up to 80–90% of the population falls into this group in several countries. The definition of traditional medicine is "the whole of the knowledge, skills, and practises based on indigenous philosophies, convictions, and experiences from many civilizations, whether, explicable or not, employed in the prevention, diagnosis, and maintenance of health physical and mental diseases are improved or treated."[1]

The 20th century saw great change in every facet of life, mostly as a result of advances in science and technology. Antibiotics were discovered in various scientific domains, yet both utilised the same research methods and ways of thinking. Ayurveda is mostly a conceptual discipline where conceptions have developed around health principles, etiopathogeneses of illnesses, and treatment procedures that include therapeutic diets and treatments in addition to pharmacological therapies to restore the body's imbalance.[2] The usage of plants has been the traditional source of food and medication in this system of healing since antiquity. India has been a leader in this sector since its traditional medical systems have been flourishing for ages and millennia in a well-codified form. Local herbs and plants are utilised historically in all regions of the world. Ayurveda has its own legitimate literature, including material medicine, and is founded on its own original and distinctive fundamental principles. In India, Ayurveda has been practised continuously for thousands of years and continues to be the primary, official medical system with a substantial infrastructure.[3] Ayurveda is really regarded as the most authentic kind of ancient medicine in India.

## Hypothesis

H1: Many traditional remedies are sourced from natural resources including plants, herbs, and minerals. Intellectual property rights can incentivise sustainable harvesting techniques, limiting overuse and exhaustion of natural resources also, by gaining intellectual property rights, indigenous people may have more influence over the marketing of traditional medicines, perhaps leading to economic advantages. Collaboration between indigenous communities and outside intellectual may be encouraged through the protection of traditional knowledge.

## Research Questions

1. What are the specific Intellectual Property Rights mechanism considered for protecting Indigenous Knowledge associated with Traditional Medicine?
2. To what extent do Intellectual Property Rights contribute to the sustainable use and conservation of natural resources utilized in traditional medicine practices?
3. How can a balance can be strike between the necessity for intellectual property rights to safeguard traditional knowledge and the values of open access and sharing that are necessary to their cultural practises?

## Scope

The study will examine the usage of various intellectual property protection strategies, in relation to preserving traditional medical knowledge. Also, there will be an comparative analysis of experiences and outcome of indigenous community with or without Intellectual Property protection for their Traditional Medicine knowledge the study will also include implications of Intellectual Property Rights on the sustainable use of natural resources in traditional medicine and Traditional Knowledge.

[1] WHO, General Guidelines for Methodologies on Research and Evaluation of Traditional Medicines, WHO/EDM/TRM/2000.1, Geneva, 2000.

[2] Dahanukar Sharadini A. Evidence- Based Ayurveda, Lectures on Ayurveda, Kottakkal Ayurveda Series: 50. Kottakkal, Kerala: The Arya Vaidya Sala; 2002. Jan, pp. 159–68. [Google Scholar]

[3] Singh RH. Herbal Care of Mental Health, Body- Mind- Spirit Integrative Medicine in Ayurveda, Yoga, Nature care. 1st ed. Varanasi: Chaukhamba Surbharati Prakashan; 2009. p. 138. [Google Scholar]

## Research Methodology

The Research approaches through qualitative methodology as well as quantitative methodology, as it will examine data to find trends, correlations, and patterns pertaining to traditional medicine and intellectual property rights. The paper will also provide policy suggestions and implications based on the results to safeguard indigenous knowledge and balance it with intellectual property rights and will explain the main conclusions and their implications. The research will also incorporate specific case studies.

## Indigenous Knowledge

Indigenous knowledge is the local Knowledge held by indigenous people for a particular culture or community. It serves as the foundation for local decision-making in a variety of areas, including natural resource management, education, health, and agriculture. These people rely on certain abilities and information that, over an extended period of time, have been impacted by innovation and examination for their livelihoods.[4] Although the owners of such knowledge revere it, the global economy also benefits from it as it is a piece of global knowledge. The inter-culture nature of indigenous knowledge is one of its main distinctive features which is transmitted from one generation to other. The information is held, for future generations by those who possess it. It has been linked with the development process and been maintained, transmitted, adopted, and altered in a variety of contexts.[5]

The compilation of information possessed by those who are not considered to be "developed" in the eyes of modern science and civilization appears to be referred to as indigenous knowledge, or occasionally traditional knowledge. Whenever this word is used, it typically refers to the indigenous people of a nation or territory whose past includes spurning from "modern civilisation" in one form or another. The classification of information as "local," "indigenous," or "modern scientific/formal" affects the value that will be placed on it. The mount of knowledge systems is those of power relations, in which the strong subdue the weak.[6]

## Traditional Medicine

Traditional medical knowledge has a long history in India and the Indian subcontinent. This ancestry comes from several medical traditions, such as yoga, Siddha, Unanani, homoeopathy, naturopathy, and Ayurveda.[7] The majority of this information has been transmitted orally, but a good amount of portion of it is documented in several ancient works that are often unavailable in various traditional or regional languages, including Hindi, Sanskrit, Tamil, Urdu, and others. Their long-established codification grants them public domain status even when they are snobbish. Through the patent system, multinational pharmaceutical companies and research institutes have recently taken advantage of India's medical legacy. Three patents that are noteworthy and are related to turmeric, basmati, and neem; for which applications for patents were contested in the USPTO, the European Patent Office, and other forums.[8]

India created the TKDL[9] as a defensive anti-appropriation strategy in retaliation to the widespread biopiracy. This strategy is an aggressive attempt to make digitally accessible versions of the previously isolated but codified Indian traditional medicinal knowledge available so that patent examiners can use them as proof of prior art, or pre-existing knowledge, to undermine later frivolous or biopiracy patents.[10] An extensive interdisciplinary and

[4] Warren, 1991; Flavier et al. 1995, in World Bank Website for Sub-Saharan Africa.
[5] World Bank Website.
[6] Ibid.
[7] See OGUAMANAM,supra note 14, at 120-21.
[8] See, e.g., Arewa, TRIPS and Traditional Knowledge, supra note 18, at 170-79 (providing detailed accounts of such biopiracy); Murray P. Eiland, Patenting Traditional Medicine, 89 J. PAT. & TRADEMARK OFF. Soc'Y 45, 62-69 (2007); Emily Marden, The Neem Tree Patent: International Conflict Over the Commodification of Life, 22 B.C. INT'L & COMP. L. REV. 279 (1999) (discussing the neem tree patent).
[9] Traditional Knowledge Digital Library.
[10] The ambitious nature of the TKDL project is reflected in the intensity of its execution. In March 2007, Vinod Kumar Gupta reported the following statistics: Altogether, 148 books comprising 230 volumes of Ayurveda, Unani, Siddha and Yoga are being used for the TKDL project. Sixtyfour books of ninety volumes address Ayurveda with an anticipated 76,000 formulations. Unani TKDL is being derived from nineteen books of sixteen volumes. Both Ayurveda and Unani are in the same format and languages: Urdu, Arabic and Persian. Targeted formulations for Siddha are anticipated to be 12,000 derived from 45 Tamil texts of 53 volumes. Yoga TKDL is projected to be

interministry state-sponsored initiative is the TKDL for India's medical systems. It makes use of the extensive human capital of the country in the fields of science, research, medicine, information technology, and bureaucracy.[11] In line with its manifesto, "The project aims to document traditional knowledge from literature related to Ayurveda, Unani, and Siddha that is currently in the public domain. The documentation will be done in five international languages—English, German, French, Japanese, and Spanish in a digitalized format."[12]

## Protection of Indigenous Knowledge(IK)

For the following reasons, IK cannot be protected by the IPSs[13] in use today:

(i) While IK has pooled ownership, it aims to privatise ownership and is deliberated to be owned by people or businesses.
(ii) While IK is passed down from generation to generation indefinitely, the protection has a terrestrial limit.
(iii) It takes a tapered definition of invention, holding that it must meet formal requirements for originality and should be useful in an industrial setting; in contrast, indigenous innovation is gradual, unofficial, and happens over time. To safeguard IK, sui generis[14] or alternative legislation is required.

*International initiative*

*Convention of Biological Diversity(CBD):*

With the aim of creating national policies for the preservation and sustainable use of biological variety, this is the first international agreement which recognises the role local and indigenous populations which they play in biodiversity protection and sustainable usage. The three primary objectives of the CBD are the preservation of biological variety, or biodiversity; sustainable use of its essential parts; and just and equitable distribution of the advantages resulting from genetic resources.[15]

*Trade related Aspect of Intellectual Property Rights(TRIPS):*

Only certain sections of this Agreement are applicable to the protection of IK. If a geographical indicator is linked to the production and sale of products, then the duty to safeguard such indications can be utilised to protect intellectual property. It explains that while determining geographical indications for protection, certain qualities, reputations, or other aspects of the commodities that are primarily due to their geographical origin must be taken into consideration. Thus, the IK linked with items might be protected by geographical indication[16]. Article 27.3(b)[17], which addresses the patentability of intellectual knowledge, is presently being revised by the WTO Council for TRIPS.[18]

*India's initiative*

The Indian patent law was recently revised, and one of the new sections discusses that the source and geographical origin of any biological material employed in an invention should be disclosed when filing for an Indian patent.

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created from 150 posture images from 20 books and 24 million pages of information have been created out of the projected 31 million pages for 2007. These statistics show that in the five years in which TKDL has been active, it has exceeded most of its projections. See Vinod Kumar Gupta, India, TKDL: Definition and Classification of Intangible Cultural Heritage and Traditional Knowledge in the Context of Inventory Making, at 20 (paper delivered at the Conference on Intangible Cultural Heritage and Intellectual Property Under the 2003 UN Convention for the Safeguarding of Intangible Cultural Heritage, New Delhi, India, March 25-27,2007) (on file with author).

[11] The collaborating institutions include the National Institute of Science Communication and Information Resources (NISCAIR), Council of Science and Industrial Research, Ministry of Science & Technology and the Department of Ayurveda, Yoga, Unani, Siddha and Homeopathy (AYUSH) and Ministry of Health and Family Welfare. The project is being implemented at the NISCAIR. This author was privileged to participate in a guided tour of the TKDL in the spring of 2007 and had an opportunity to interview some staffers of the project at NISCAIR.

[12] About TK DL, http://www.tkdl.res.in/tkdl/langdefault/common/Abouttkdl.asp ?GL =Eng (last visited May 20, 2008).

[13] Indigenous Peoples Survey.

[14] of its own kind.

[15] UNEP, 2003.

[16] ARTICLE IN PRESS 230 S. Subba Rao / International Journal of Information Management 26 (2006) 224–233

[17] TRIPS Agreement.

[18] WTO, 2004.

Additionally, clauses that include non-disclosure or improper disclosure of the same as grounds for objection and, during the patents are awarded, revocation have been added as an alter method. Provisions that include expectation of invention by existing local knowledge, including oral information, as one of the grounds for objection with granting for revocation of patent have also been inserted into the legislation to safeguard IK from being patented.

*The nation's food and nutritional security goals are to be met through the Protection of Plant Varieties and Farmer's Right Act 2001*[19] in order to ensure the agricultural industry continues to grow sustainably for both the current and future generations. It recognises that the genetic resources of plants are the basic element required for crop genetic development. An essential component of the Act discusses about the efficient benefit-sharing agreement between the supplier and the user of plant genetic resources. It mandates that the place from which the genetic material was obtained should be disclosed, along with details on the agricultural community's potential contribution to the variety. A breeder's bred plant variety may lose its protections if information about it is improperly disclosed.[20]

The important geographical indicators of India are to be safeguarded under the *Geographical Indication of Goods (Registration and Protection) Act, 1999*. Only authorised users and geographical indications registered under the Act are eligible for the protection under this Act. The Act allows the registration of a geographical indication by any group of people, producers, or legally created institution that represents the interests of the products produced. Under this law, the holder of intellectual property (IK) in items manufactured and sold with geographical indications may be able to register and safeguard their IK.[21]

## Traditional Medicine and Intellectual Property Right

Indigenous and traditional peoples have made many contributions to the preservation of the world's biodiversity and traditional medical knowledge. Newly discovered knowledge on natural oils, body enhancement and skin care products, cures for various affliction, and other health-related topics is constantly being discovered everyday through related surveys and study. As the globalised economy looks to traditional and indigenous societies for more "explorations" into the diseases of today, new, and difficult issues are emerging. Although it is believed that everyone has the fundamental right to share and enjoy the world's biological resources but this idea clashes with traditional or indigenous people' property rights. Trade is the commercialized of all available resources, including commodities, standard medical procedures, and ideas which typically occurs without any benefit to the nation or community of origin.

The following reasons make IPR insufficient and unsuitable for the protection of traditional environment-friendly knowledge and community resources:

-they recognise individual rights, not collective rights;

-they require a specific act of "invention";

-they simplify ownership authority;

-they encourage commercialization;

-they recognise only market values;

-they are subject to manipulation and economic power;

-they are expensive, complicated, and time-consuming to monitor and enforce.[22]

[19] http://agricoop.nic.in/seeds/farmersact2001.htm
[20] Sahai, 2003.
[21] Ministry of Law, Justice and Company Affairs, Govt. of India, 1999
[22] Posey, D. A., "Commodification of the sacred through intellectual property rights" Journal of Ethnopharmacology, 83, 3-12, (2002).

Furthermore, a lot of curative plants are in danger of being extinct which can rise with overutilization of these plants to meet industrial and/or export needs.[23] Given that the Ancient Perejil World have went through same, has also became a historical concern. The ancient occupant of Cyrene, a seaside city in ancient Libya, were extremely wealthy thanks to the plant Silphium, which is well-known for its prophylactic[24] qualities. However, excessive plant harvesting led to the plant's extinction and the loss of further financial benefit from the plant.[25] Therefore, it is necessary to control the trade in medicinal plants, ideally as part of a larger legislative framework addressing biological resource conservation and sustainable usage.

In addition to being an important ally in this fight, conservation is also necessary with the continued practise of traditional medicine in nations with plentiful biodiversity. The only significant international agreement that recognises indigenous populations as the owners of biodiversity and upholds their right to preserve is the Convention on Biological Diversity (CBD), but it faces competition from the considerably more formidable TRIPS.[26] For which the review is been given for the following Convention:

States parties are required to "respect, preserve and maintain indigenous and local communities' knowledge, innovations, and practises that embody traditional life styles relevant for the conservation and sustainable use of biological diversity and promote the wider application with the approval and involvement of the holders of such knowledge, innovations, and practises and encourage the equitable sharing of the benefits arising from the use of such knowledge, innovations, and practises."[27]

"Encourage and develop models of cooperation for the development and use of technologies, including traditional and indigenous technologies,".[28]

IPR applications can be an advantage for countries rich in traditional medical advances, such as China or India, but they will be averse to other countries who are not inventors but nonetheless utilise medicines. Traditional medicine's inadequate documentation works against more recently documented fields since it drags down their priority in the IPR. One cannot dissolute the issues faced by the indigenous populations from the implications of intellectual property rights concerning to them. Various villages either entirely vanished or were incorporated into the idea of "modernization" because of which a great deal of the customs and uses will soon be lost to history.

IPR for traditional medicine will not function without maintaining traditional systems, and it cannot be considered without biodiversity conservation. Even the CBD seeks to preserve rich biodiversity, also helping to safeguard the wealthy and access and sharing of the sources.

## Jeevani

Scientists from the Tropical Botanic Garden and Research Institute (TBGRI), which is situated in the state of Kerala( India), created an herbal remedy known as "Jeevani."[29] Jeevani was founded on the ancient medical knowledge of the Kani tribe, located in the state of Kerala's Thiruvananthapuram area( South India). It comes from the tiny, everlasting, bedrock arogyapaacha plant (trichopus zeylanicus), which is usually found in Malaysia, Southern India, and Sri Lanka. According to reports, Jeevani exhibits the following symptoms:

1. Has ergogenic aid properties as demonstrated by anti-peptic ulcer and antifatigue effects.
2. Activates the cellular immune system. ·
3. Activates delayed type supersensitivity reactions and antibody synthesis.

[23] Newman, E.B. "Earth's Vanishing Medicine Cabinet: Rain Forest Destruction and its Impact on the Pharmaceutical Industry" American Journal of Law and Medicine, 20(4), 479-501, (1994).
[24] a device or drug serving to prevent pregnancy.
[25] Sumner, J. The Natural History of Medicinal Plants, Timber Press, Portland, Oregon, (2001).
[26] Bodeker, G., Indigenous Medical Knowledge: The Law and Politics of Protection – This study was presented at the Oxford Intellectual Property Research Centre Seminar in St. Peter's College, Oxford on 25th January), (2000).
[27] Article 8(j) of TRIPS.
[28] Article 18.4 of the contract between the parties.( TRIPS).
[29] This discussion of Jeevani is derived from a case study on the origins and development of that herbal medicine prepared by Dr. Anil Gupta for the World Intellectual Property Organization and the United National Environment Programme and submitted to the Fifth Conference of the Parties of the Convention on Biological Diversity. See UNEP/CBD/COP/5/INF/26 (10 May 2000) (hereinafter "WIPO/UNEP Study").

4. Increases the number of polymorphonuclear granulongates.
5. Activates the body's natural defences.

Members of an ethnobotanical mission to the Western Ghats Kani tribals in 1987 was given access to the fruit of the arogyapaacha plant, and after eating it, the tribal people were as reported feeling "charged and full of energy and vitality."[30] Which led to the popular press publishing reports about Jeevani's impact.[31] Moreover, Jeevani also seems to be a part of Japanese herbal remedies.[32]

Various research was conducted to identify the active components of the arogyapaacha plant, along with clinical studies conducted to show how arogyapaacha might improve work production, mental clarity, and athletic performance. Researchers at TIBGRI carried out these studies after realising that they "would not be able to generate much revenue by licencing the drug they developed without intellectual property protection."[33] Three patents were submitted in India (product patents for pharmaceuticals not accessible in that country) that claimed methods for preparing herbal drugs based on arogyapaacha, but were not filed in any other countries. In exchange for a licence fee, TIBGRI staple arrangements to distribute arogyapaacha-related technologies to interested firms.

The Kani Samudaya Kshema Trust which was established with the help of TIBGRI to advance the protection and sustainable use of biological resources, as well as the welfare of the Kanis in Kerala, Financial advantages was deposited into this Trust in the form of a portion of the royalties that TIBGRI obtained for the use of its arogyapaacha-related technology.

## Other Case Stories

- India possesses excellent expertise in this area that can serve as a decoration for other nations. The establishment of the "Honey Bee Network" in 1988–1989 marked a shift in viewpoint on how to address people's creativity, knowledge systems, and ethics related to conservation. The development of the Honey Bee Network needs institutional backing, and it was believed that the publication of the Honey Bee newsletter and related activities would need separate financing. Which indeed led to the creation of SRISTI (Society for Research and Initiatives for Sustainable Technology and Institutions) and its research initiatives.[34]
- Asian countries have long made use of the root of the turmeric plant (Curcuma longa) in medicine, cosmetics, and cookery. It is used to treat a wide range of conditions in traditional Indian Ayurvedic medicine, including anaemia, asthma, burns, conjunctivitis, dental issues, diabetes, diarrhoea, and pain. Turmeric has also able to catch the interest of the mainstream medical establishment in recent years. A 1995 U.S. patent for a technique involving the application of turmeric to wounds was granted to two Indian scientists working at an American institution. In 1997 that patent was revoked in response to a challenge brought up by an Indian research organisation. This is sometimes described as the first instance of a biopiracy patent being successfully reversed.[35]
- The Indian lawsuit pertaining to turmeric ultimately led the way for the establishment of the Traditional information Digital Library (TKDL), an electronic repository for traditional information pertaining to therapeutic plants. Its goal is to stop existing information from being patented. A database like this would allow patent officers anywhere to look up and review any common usage, which would stop patents from

[30] Pushpangadan, P., Rajasekhjran S., Ratheesh Kumar P.K., Velayudhan Nair V., Lakshmi N., and Sarad Amma L., "Arogyapacha (Trichopus Zeylanicus). The Ginseng of Kani Tribes of Agasthyar Hills (Kerala) for Evergreen Health and Vitality." Ancient Sciences of Life, 7:13-16 (1988).
[31] WIPO/UNEP Study, p.40.
[32] Amagayha, S., and Ogihara, Y., Journal of Ethnopharmacology; 28:357 (1990).
[33] WIPO/UNEP Study, p. 42.
[34] http://www.sristi.org (Connection Date: 1.6.2006).
[35] Finger, J.M. Poor People's Knowledge: Promoting Intellectual Property in Developing Countries. Herndon, VA, USA: World Bank, 2003.

being incorrectly granted based on information that is already in the public domain. Additionally encouraging is the TKDL project's adoption on a global scale.[36]

- More than two millennia ago, Indian writings reference the neem tree (Azadiracthta indica). It was been used to make a wide range of products, such as fungicide, cosmetics, insect repellent, and medications for humans and animals. Neem seeds were traditionally steeped in water by Indian farmers, then drench their plants with the emulsion. Neem attracted in merchants from the West as it has minimal harmful side effects compared to the majority of chemical pesticides. Innumerable patents exist on neem products, both in Europe and the US as well as in India. In, 1993, P.J. Margo in India, Private Ltd. started manufacturing and selling neem biopesticides because of which Demonstrations in public appeared against this project, and a number of advocacy organisations banded together in 1995 to confront the US and Europe. Indians have been utilising neem products in the same way for generations, thus patents were denied on the grounds that the product or procedure was not unique. The U.S. patent is still enforceable even though the European Patent Office cancelled the European patent.[37]

## Conclusion

As conclusion, the developing nations are also concerned about the patents being granted for non-original innovations that are created utilising their traditional knowledge. The developing world is extremely concerned about the unfair exploitation of biological resources and the traditional knowledge that is done to them by the developed country. Since TRIPS is the WTO component that has the authority to mandate the member nations to honour their promises, which is the most significant agreement. The TRIPS Agreement, which codifies international intellectual property protection regulations, has to be amended appropriately in order to affect a complete global shift in the intellectual property system and fight bio-piracy. TRIPS should incorporate the three guiding concepts needed to stop biopiracy. These guidelines consist of the following:

- Revealing the location of biological resources' or associated traditional knowledge's source when employed in creation.

- Getting the relevant local community's prior informed consent.

- Ensuring fair agreements for benefit sharing.

The creation of intellectual property, as well as its valuation, usage, and protection, are becoming more and more significant in today's society. The qualities of traditional and indigenous existence are being destroyed by the frequently evolving modern world. Regretfully, the cultures, rich in biodiversity and values, are also among the poorest of all countries and groups. The people who are most wealthy in terms of nature and native knowledge are also the least wealthy in terms of money, technology, infrastructure, and legal access. The fundamental contradiction arises from the incompatibility of traditional health systems, which incorporate traditional knowledge and property protection mechanisms, with the uniform, systematize commercial systems of industrialised capitalist nations.

Identification of compounds with pharmacological significance that are helpful in "western" treatment has been made possible in part by traditional medical expertise. Products with a historical medicinal history, botanicals in particular plays a significant and expanding role in global medical product commerce. Ultimately, it has been demonstrated that conventional wisdom may provide valuable "leads" for the identification of items that, with more research, may find widespread use in the treatment of illness. From conventional knowledge to pharmaceuticals with broad applications, there is a chain that runs through them. Every link in that chain needs to be protected and deserves it.[38]

[36] Rawat, R.B.S., Medicinal Plant Sector in India with Reference to Traditional Knowledge and IPR Issues. Paper presented in: International Systems for the Protection of Traditional Knowledge, organized by Ministry of Commerce, Government of India and UNCTAD, New Delhi, April 3-5, 2002.

[37] Finger, J.M. Poor People's Knowledge: Promoting Intellectual Property in Developing Countries. Herndon, VA, USA: World Bank, 2003.

[38] As noted above, in the case of traditional knowledge, in addition to modalities for protection, modalities to prevent unauthorized persons from obtaining protection is also essential.

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