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INDIAN TRADITIONAL KNOWLEDGE SYSTEMS AND INTELLECTUAL PROPERTY LAW

Abstract

Traditional knowledge in India is not confined to old books or rituals. It survives in medicinal practices, farming methods, seed selection, food traditions, handicrafts, ecological knowledge, and systems such as Ayurveda, Siddha, Unani and Yoga. Much of this knowledge was developed collectively and refined over generations. That feature gives it social value, but it also creates a legal difficulty. Modern intellectual property law usually begins with an identifiable inventor or author, a date of creation and a limited term of protection. Traditional knowledge often has none of these features. The result has been repeated concern over misappropriation, especially where well-known community knowledge has been presented elsewhere as a new invention. India has responded through a combination of patent exclusions, disclosure and opposition rules, geographical indications, farmers' rights, biodiversity and benefit-sharing law, and the Traditional Knowledge Digital Library (TKDL). This assignment examines how these

mechanisms work together, what was learned from the turmeric, neem and basmati controversies, and why conventional IPR alone cannot fully protect knowledge held by communities. It also considers the 2024 WIPO Treaty on Intellectual Property, Genetic Resources and Associated Traditional Knowledge, which had not yet entered into force as of September 2026. The paper argues that India's present framework is strongest when defensive protection is combined with community participation, fair benefit sharing, documentation and carefully designed positive rights.

Keywords

Traditional Knowledge, Intellectual Property Rights, TKDL, Ayurveda, Biopiracy, Geographical Indications, Biodiversity, Farmers' Rights, Benefit Sharing, Community Knowledge.

Introduction

India's traditional knowledge is one of the clearest examples of knowledge being created outside the formal laboratory or university system. Long before modern intellectual property statutes were enacted, communities were identifying medicinal plants, improving crop varieties, preserving food, developing dyes, designing irrigation practices and passing health-related knowledge from one generation to the next. Classical medical systems such as Ayurveda, Siddha and Unani contain codified knowledge, while a large amount of local and tribal knowledge continues through practice, oral teaching and community memory.

The legal problem begins when this knowledge enters a modern commercial or technological market. A pharmaceutical researcher may isolate a compound from a plant known to a village healer. A company may market a product based on a traditional formulation. A breeder may use genetic material preserved by farmers. These activities can involve real scientific work and investment, but they also raise a basic question: how should the legal system distinguish a genuinely new invention from an attempt to claim exclusive rights over knowledge that already existed?

Indian law has gradually developed several answers. The Patents Act, 1970 expressly excludes inventions that are, in effect, traditional knowledge. The patent system also allows traditional knowledge to be used in opposition to improper claims. The Geographical Indications of Goods

(Registration and Protection) Act, 1999 can protect the names and reputation of traditional regional products. The Protection of Plant Varieties and Farmers' Rights Act, 2001 recognises the role of farmers in conserving and improving plant genetic resources. The Biological Diversity Act, 2002, as amended in 2023, contains rules on access and fair and equitable benefit sharing. Alongside these statutes, the Traditional Knowledge Digital Library has become India's best-known defensive tool against wrongly granted patents.

This assignment studies these mechanisms as parts of one larger policy problem. It does not treat traditional knowledge as something frozen in the past. Traditional knowledge remains useful precisely because communities continue to practise, adapt and transmit it. The real task of intellectual property law is therefore to prevent unfair appropriation without stopping research, legitimate innovation or the continued use of knowledge within the communities that created and preserved it.

2. Understanding Indian Traditional Knowledge Systems

2.1 Meaning And Characteristics

There is no single form of traditional knowledge. The expression covers know-how, practices, skills and innovations that are maintained within a community and transmitted over time. Some knowledge is written in classical texts; some exists in family or occupational traditions; and some is known only to particular local or indigenous groups. What makes it 'traditional' is not simply its age. The more important feature is the social process through which it is held, used and passed on.

Traditional knowledge generally differs from modern individual invention in four ways. First, authorship is often collective. It may be impossible to identify one person as the original creator. Second, the knowledge is cumulative: later generations add observations to what earlier generations already knew. Third, the knowledge may be expressed in local languages or orally rather than in technical journals. Fourth, it is often tied to a biological resource, a place, a livelihood or a cultural practice. A medicinal use of a plant, for instance, may have both scientific significance and cultural meaning for the community that uses it.

2.2 Illustrative Indian Examples

- Ayurveda, with its extensive body of medicinal formulations, therapeutic practices and dietary knowledge recorded in classical texts and later commentaries.
- Siddha and Unani systems of medicine, which contain substantial knowledge concerning herbs, minerals, formulations and methods of treatment.
- Yoga and related practices, which include physical postures, breathing practices and broader systems of discipline transmitted through texts and teaching traditions.
- Traditional agricultural knowledge, including local seed selection, mixed cropping, pest control, soil management and water conservation practices.
- Community knowledge of forests, medicinal plants and biodiversity, particularly among tribal and rural populations.
- Traditional crafts and products whose reputation is linked to a region, such as Madhubani paintings, Pochampally Ikat, Kanchipuram silk and other GI-protected goods.

These examples show why traditional knowledge cannot be placed neatly into a single branch of IPR. Some issues concern patents, others geographical indications or plant varieties, and many involve biodiversity law and community rights rather than exclusive private ownership in the usual sense.

3. Why Traditional Knowledge Requires Legal Protection

3.1 Economic and Community Interests

Traditional knowledge can generate considerable commercial value. Medicinal formulations may inspire pharmaceuticals or wellness products; traditional crops may be valuable to plant breeders; and regional crafts can attract national and international markets. If an outside firm captures that value while the knowledge-holding community receives neither recognition nor benefit, the legal system risks rewarding appropriation rather than innovation. Protection is therefore partly an issue of economic fairness.

3.2 Cultural and Ethical Interests

The problem is not only financial. Knowledge may be linked to identity, customary rules, sacred practices or responsibilities toward land and biodiversity. A community may object to the use of particular knowledge even where money is offered, or it may wish to permit use only on certain

conditions. Conventional IPR normally asks who owns a right and how long the right lasts; community-based knowledge also raises questions of consent, attribution and cultural dignity.

3.3 Preservation and Continued Innovation

Protection can also support preservation. When communities are able to obtain value from traditional crops, crafts or knowledge-based products, younger generations have a stronger reason to continue learning them. At the same time, protection should not turn living traditions into museum pieces. Farmers, healers and artisans have always adapted practices in response to changing circumstances. A sound legal system must allow that process to continue.

4. The Conceptual Mismatch Between Traditional Knowledge And Classical Ipr

Most modern IPR systems were designed around individual or corporate creators. Patent law rewards inventions that are new, inventive and capable of industrial application. Copyright protects original expressions created by identifiable authors. Trade marks distinguish commercial sources. Each of these models works reasonably well where the creator, date of creation and subject matter can be identified. Traditional knowledge often challenges all three assumptions.

A remedy used by a community for centuries cannot satisfy novelty merely because a patent examiner has never encountered it. Likewise, a community cannot easily claim conventional copyright over a healing practice or an agricultural method. Even where a specific text or artistic expression is protected, the underlying traditional knowledge may remain outside copyright. Fixed terms of protection also fit awkwardly with knowledge that a community regards as an inherited and continuing resource.

Another difficulty is the idea of the public domain. In classical intellectual property theory, material outside protection is generally free for anyone to use. Communities may understand matters differently. Knowledge can be widely known within a community without being regarded as freely available for unrestricted commercial exploitation by outsiders. This difference is one reason why debates on traditional knowledge frequently move beyond ordinary IPR toward prior informed consent, benefit sharing and sui generis rights.

5. The Indian Legal Framework For Traditional Knowledge

5.1 Patents Act, 1970

Indian patent law contains a direct safeguard for traditional knowledge. Section 3(p) of the Patents Act, 1970 states that an invention which, in effect, is traditional knowledge, or which merely aggregates or duplicates the known properties of traditionally known components, is not an invention for the purposes of the Act. This provision is important because it addresses the problem at the patentability stage itself. A known traditional use should not become a private monopoly simply because it is described in modern patent language.

The Act also contains disclosure and opposition mechanisms relevant to biological material and traditional knowledge. In appropriate cases, the patent specification must disclose the source and geographical origin of biological material. Patent claims can also be opposed where the alleged invention was already anticipated by knowledge available within a local or indigenous community, including oral knowledge. These rules widen the concept of relevant prior art beyond conventional scientific publications.

5.2 Traditional Knowledge Digital Library (TKDL)

The Traditional Knowledge Digital Library is India's most distinctive defensive measure. It was established in 2001 by the Government of India through collaboration between the Council of Scientific and Industrial Research (CSIR) and the ministry responsible for Indian systems of medicine, now the Ministry of AYUSH. Its purpose is straightforward: patent examiners should be able to find Indian traditional knowledge before granting a patent, not years later during a costly revocation dispute.

The need for the TKDL arose partly because traditional medicinal knowledge was difficult for foreign patent examiners to search. Relevant material could be in Sanskrit, Hindi, Tamil, Arabic, Persian or Urdu, and written in formats far removed from modern patent databases. The TKDL translates and structures information from Ayurveda, Unani, Siddha, Sowa-Rigpa and Yoga into forms that patent offices can search. CSIR reported in July 2026 that the database contained information on more than 5.2 lakh formulations and practices, was available in five international languages, and was accessible under agreements to eighteen patent offices. CSIR also reported

that TKDL evidence had contributed to more than 375 patent applications worldwide being revoked, rejected, amended, withdrawn or abandoned.

The strength of the TKDL is that it does not try to convert every traditional formulation into a private right. Instead, it makes prior knowledge visible to the patent system. In other words, it is a defensive database: its primary function is to stop another person from claiming exclusive rights over what is already known.

5.3 Geographical Indications

The Geographical Indications of Goods (Registration and Protection) Act, 1999 is useful where traditional value is connected with a specific place. A GI identifies goods whose quality, reputation or other characteristic is essentially linked to geographical origin. This model suits many traditional agricultural products, textiles and handicrafts because it protects a collective regional identity rather than naming a single inventor.

Madhubani Paintings, for example, were registered as a GI in India in 2007. Basmati is also registered as a GI, with APEDA as the applicant for the registered indication. GIs can help authentic producers distinguish their goods from imitations and can support a premium market for regionally rooted products. However, GI protection is not the same as ownership of the underlying knowledge. An outsider may sometimes imitate a technique while avoiding the protected geographical name. Effective GI protection therefore depends on producer organisation, quality standards and enforcement, not registration alone.

5.4 Protection of Plant Varieties and Farmers' Rights

Agricultural traditional knowledge receives additional recognition under the Protection of Plant Varieties and Farmers' Rights Act, 2001. The legislation deliberately combines plant breeders' rights with farmers' rights. The official purpose of the system includes recognising farmers' contribution to conserving, improving and making available plant genetic resources for the development of new varieties. Farmers can seek registration of farmers' varieties, and the framework also contains mechanisms connected with benefit sharing and community recognition.

This is important because many modern varieties depend on genetic material that farming communities have selected and conserved over long periods. Treating the breeder as the only source of innovation would ignore that earlier contribution. The Indian model is therefore broader than a conventional breeder-rights regime.

5.5 Biological Diversity Act and Benefit Sharing

Traditional knowledge concerning plants, microorganisms and other biological resources is also addressed through biodiversity law. The Biological Diversity Act, 2002, amended in 2023 with key changes effective from 1 April 2024, is based on conservation, sustainable use and fair and equitable sharing of benefits. Section 21 provides for benefit-sharing arrangements in relation to biological resources, associated practices and knowledge. Depending on the case, benefits may include monetary compensation, technology transfer, participation in research and other forms of sharing.

This approach matters because patent law alone cannot answer the question of who should benefit when a commercial product is developed from a biological resource and community knowledge. Even if a final invention is genuinely patentable, access to the underlying resource or knowledge may still raise benefit-sharing obligations. Biodiversity law therefore complements IPR rather than simply duplicating it.

5.6 Copyright, Trade Marks and Certification

Copyright and trade mark law have a more limited but still useful role. Copyright can protect a newly written book, artwork, recording or other original expression based on a traditional theme, but it usually does not give ownership over the underlying knowledge itself. Collective and certification marks can help communities or producer groups identify authentic goods and establish quality standards. These tools are valuable where the main problem is market confusion rather than patent misappropriation.

6. Biopiracy And The Indian Experience

The expression 'biopiracy' is commonly used for the appropriation or commercial exploitation of biological resources or associated traditional knowledge without proper recognition, consent or

benefit sharing. India's policy on traditional knowledge was shaped by several high-profile disputes that showed how difficult it can be to correct an improper claim after a patent has already been granted.

6.1 Turmeric

Turmeric has long been used in India for medicinal and household purposes, including the treatment of wounds. In the 1990s, a United States patent was granted for the use of turmeric in wound healing. CSIR challenged the patent by producing evidence that the claimed use was already known. The patent was ultimately revoked. The legal victory was significant, but so was the lesson: India had to spend time and resources proving to a foreign patent office that a supposedly new invention was part of existing knowledge.

6.2 Neem

Neem produced a similar debate. Indian communities have used neem in agriculture and medicine for generations. Patent claims concerning neem-based fungicidal products led to opposition proceedings in Europe and became an international example of concern over biological resources being patented without sufficient regard to prior traditional use. The neem dispute reinforced the idea that orally transmitted or locally documented knowledge must be visible to patent examiners.

6.3 Basmati

The basmati controversy involved a different combination of patents, plant characteristics and geographical reputation. Claims made in the United States by RiceTec generated concern in India because 'basmati' was associated with a long-standing South Asian rice tradition. Although the dispute was not identical to the turmeric and neem cases, it strengthened Indian awareness of the need to protect traditional agricultural reputation through tools such as geographical indications and to monitor foreign intellectual property claims more closely.

Together, these disputes shifted the policy discussion from reacting after misappropriation to preventing it in advance. That change in approach explains much of the later importance of the TKDL, GI registration and stronger attention to biological-resource disclosure.

7. International Legal Framework

7.1 Convention on Biological Diversity and Nagoya Protocol

The Convention on Biological Diversity, 1992 changed the international discussion by linking biological resources with conservation, national authority over resources and equitable benefit sharing. The Nagoya Protocol, adopted in 2010, developed the access-and-benefit-sharing framework further. These instruments are not ordinary patent treaties, but they strongly influence the way countries think about genetic resources and associated traditional knowledge.

7.2 TRIPS Agreement

The WTO Agreement on Trade-Related Aspects of Intellectual Property Rights sets minimum standards for intellectual property protection but does not create a complete traditional-knowledge regime. India and other developing countries have long argued for stronger recognition of disclosure, origin and traditional knowledge concerns within the international patent system. The continuing debate shows that national rules are not enough where patent applications are filed in many different countries.

7.3 WIPO Treaty on Intellectual Property, Genetic Resources and Associated Traditional Knowledge

A major international development occurred on 24 May 2024, when WIPO member states adopted the Treaty on Intellectual Property, Genetic Resources and Associated Traditional Knowledge. The Treaty is significant because it creates, upon entry into force, an international patent disclosure requirement where claimed inventions are based on genetic resources or associated traditional knowledge. Its objectives include improving the quality and transparency of patent examination and reducing erroneous patents.

As of September 2026, the Treaty had not yet entered into force. WIPO's treaty records showed four deposited instruments of ratification or accession - Malawi, Uganda, Albania and Peru - while fifteen are required for entry into force. The Treaty therefore represents an important direction of travel, but its practical impact will depend on wider ratification and implementation by national patent offices.

8. Defensive Protection And Positive Protection

The distinction between defensive and positive protection is useful for understanding India's current position. Defensive protection tries to stop outsiders from obtaining invalid or unfair intellectual property rights. Section 3(p) of the Patents Act and the TKDL are good examples. They prevent monopoly claims over knowledge that already exists.

Positive protection goes further. It asks whether the community itself should have a legal right to authorise use, insist on attribution, negotiate benefit sharing or prevent culturally inappropriate exploitation. Existing Indian laws provide parts of this idea through GIs, farmers' rights and biodiversity rules, but there is no single comprehensive statute giving traditional knowledge holders a unified set of community rights.

Both approaches are necessary. Defensive protection without benefit sharing may stop a bad patent but still leave a community without any economic return when knowledge is commercially used. Positive protection without good documentation can be difficult to administer because the law must identify beneficiaries, define the protected knowledge and deal with overlapping community claims. A balanced system therefore needs documentation, community institutions and flexible legal remedies.

9. Persistent Challenges

- Collective ownership makes it difficult to identify a single legal rights-holder, especially where the same knowledge is shared by several villages, communities or regions.
- Oral transmission creates evidentiary problems. Knowledge may be old and widely used locally but absent from documents that conventional patent searches easily locate.
- Documentation is useful for defensive protection, yet some knowledge is secret, sacred or culturally restricted. Recording everything in a database can itself create risks.
- Benefit sharing can be difficult to administer fairly. The law must decide who represents a community and how money or other benefits should be distributed.
- Intellectual property rights are territorial, while traditional knowledge and commercial markets cross national borders. Misappropriation may therefore occur in a jurisdiction where Indian communities have little practical ability to enforce their interests.
- Conventional IPR terms are often too short or conceptually unsuitable for knowledge that communities regard as intergenerational and continuing.

- Overprotection can also create problems. Traditional knowledge frequently develops through exchange between communities, so overly rigid exclusive rights could interfere with ordinary cultural and agricultural practices.

These challenges explain why traditional knowledge cannot be protected simply by adding one more category of private property. The legal framework has to recognise collective interests without creating an unworkable system in which every use of inherited knowledge requires complicated permission.

10. Recommendations And The Way Forward

India already has a comparatively strong set of defensive mechanisms, but the system can be improved in several practical ways.

- Continue expanding and updating the TKDL, while maintaining safeguards for knowledge that should not be publicly disclosed. Defensive databases should focus on authoritative prior art and controlled access where necessary.
- Strengthen community participation in documentation and benefit-sharing decisions. Knowledge holders should not be treated only as sources of information; they should have a meaningful role in deciding how knowledge is described and used.
- Improve legal literacy among farmers, healers, artisans and local institutions so that available mechanisms such as GIs, farmers' variety registration, biodiversity procedures and opposition to improper patents can actually be used.
- Develop clearer rules for benefit sharing in commercially valuable uses of traditional knowledge, including transparent methods for identifying representative community bodies and distributing monetary and non-monetary benefits.
- Consider a carefully drafted sui generis framework for traditional knowledge that can address collective rights, attribution, prior informed consent and culturally restricted knowledge without preventing ordinary community use or genuine research.
- Support international implementation of disclosure requirements for genetic resources and associated traditional knowledge, including wider ratification of the 2024 WIPO Treaty.

- Use GIs, certification marks and producer organisations together. Registration should be followed by quality control, marketing support and enforcement against misleading commercial use.

The key is not to force every type of knowledge into the same legal model. Medicinal prior art, a traditional rice variety and a regional handicraft raise different questions. A layered framework is therefore more realistic than a single blanket right. What should remain constant is the principle that innovation built on community knowledge should not erase the contribution of the people who preserved that knowledge.

11. Conclusion

Traditional knowledge occupies an unusual position in intellectual property law. It is intellectually valuable but often has no single inventor. It may be widely known within a community but invisible to a foreign patent examiner. It can be commercially useful while at the same time forming part of cultural identity and local livelihood. These characteristics explain why ordinary patent, copyright or trade mark rules cannot provide a complete answer.

India's response has been to build protection through several legal routes rather than one statute. Section 3(p) of the Patents Act prevents traditional knowledge itself from being repackaged as a new invention. The TKDL makes a large body of Indian medicinal knowledge searchable as prior art. GIs protect regional names and reputations. The plant-variety system recognises farmers as contributors to agricultural innovation. Biodiversity law adds the principle of fair and equitable benefit sharing where biological resources and associated knowledge are used.

The turmeric, neem and basmati disputes were important because they made the cost of inaction visible. They showed that a country can lose control over the narrative of its own knowledge if that knowledge is not recognised by the institutions examining patents and commercial claims. India's later emphasis on documentation and defensive protection was therefore not merely symbolic; it was a response to concrete legal experience.

The next stage should focus more strongly on positive community interests. Preventing an invalid patent is essential, but communities may also deserve attribution, participation in decision-making and a fair share of benefits where their knowledge contributes to commercial

value. The 2024 WIPO Treaty points toward a more transparent international patent system, although it had not yet entered into force by September 2026. For India, the most workable approach remains a combination of defensive prior-art protection, biodiversity and benefit-sharing rules, collective market tools and carefully designed community rights. Such a framework can encourage modern research without treating centuries of accumulated knowledge as if it belonged to no one.

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