



The Prospects for the Development of IPRs in Indian Knowledge Systems

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Abstract

The evolution of Intellectual Property Rights (IPR) in the context of Indian Knowledge Systems (IKS) represents a significant shift from merely preserving traditional knowledge to actively recognizing and protecting it as a valuable intellectual asset. Historically, India's vast repository of indigenous knowledge, including Ayurveda, Siddha, Unani, and traditional ecological practices, was considered part of the public domain, making it vulnerable to biopiracy and unauthorized patent claims. The establishment of the Traditional Knowledge Digital Library (TKDL) has played a crucial role in documenting and digitizing this knowledge, enabling patent offices worldwide to identify prior art and prevent wrongful patents based on existing traditional remedies.

Looking ahead, the IPR framework is expected to move beyond defensive protection by introducing Sui Generis legal systems that acknowledge the collective, community-based, and intergenerational nature of traditional knowledge, which conventional patent laws often fail to accommodate. In addition, the integration of Geographical Indications (GI) and Access and Benefit Sharing (ABS) mechanisms offers economic opportunities for indigenous communities. GI protection enhances the authenticity and market value of region-specific products, while ABS ensures that communities receive fair compensation when their biological resources or traditional knowledge are commercially utilized.

The future of IKS under the IPR regime lies in combining traditional wisdom with modern scientific research and standardization. Scientific validation of ancient formulations can lead to innovations in healthcare, sustainable agriculture, and green technologies. This balanced approach not only safeguards India's cultural heritage and intellectual sovereignty but also promotes ethical innovation, ensuring that the custodians of traditional knowledge benefit from its commercial applications while preserving its authenticity and cultural significance for future generations.

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1. Introduction: The introduction to the prospects of Intellectual Property Rights (IPR) within Indian Knowledge Systems (IKS) begins with the recognition of India's profound intellectual heritage, which spans millennia and encompasses diverse fields such as medicine, mathematics, metallurgy, and sustainable ecology. For centuries, this knowledge was preserved through oral traditions, specialized apprenticeship models, and classical texts, often viewed as a communal

resource rather than private property. However, in the modern era of globalization, this "open-access" nature of traditional wisdom has made it highly vulnerable to misappropriation by external commercial entities—a phenomenon commonly referred to as biopiracy. Famous legal battles over the patenting of Neem, Turmeric, and Basmati rice by foreign corporations served as a wake-up call for India, highlighting the urgent need to reconcile ancient holistic systems with the rigid, individualistic requirements of contemporary international law.

The current developmental prospect for IPR in IKS is rooted in the strategic shift from a purely defensive posture to a proactive and innovative one. Historically, India's primary goal was to prevent "wrongful" patents through the creation of the Traditional Knowledge Digital Library (TKDL), which translated ancient Sanskrit and regional texts into modern technical formats for patent examiners worldwide. Such a system would move beyond standard patent law—which requires a single inventor and a 20-year expiration—to recognize the collective, trans-generational, and perpetual ownership held by indigenous communities.

Furthermore, the introduction of IPR into IKS provides a vital mechanism for economic and cultural sovereignty. By utilizing tools like Geographical Indications (GI) and the Biological Diversity Act, India is now positioning its traditional crafts, agricultural varieties, and medicinal practices as high-value intellectual assets. This process does not merely involve protection; it involves the scientific validation of traditional claims, turning "folklore" into "formulations" that can compete in the global pharmaceutical and wellness markets. Ultimately, the integration of IPR and IKS represents a search for a middle path—one that ensures that the original custodians of knowledge receive fair "Access and Benefit Sharing" while allowing the world to benefit from India's sustainable and holistic innovations under a regulated, ethical, and legally sound environment.

1.1. Concept of Intellectual Property Rights: Intellectual Property Rights (IPR) refer to the legal protections granted to individuals or entities for the creations of their minds, encompassing inventions, literary and artistic works, designs, symbols, names, and images used in commerce. The fundamental concept of IPR is to strike a balance between the interests of innovators and the wider public interest, providing a temporary monopoly to creators to encourage further innovation and investment in research and development. By granting exclusive rights, the legal system allows creators to benefit from their own work or investment, which serves as a catalyst for economic growth and technological advancement.

There are several distinct categories of IPR, including patents for industrial inventions, copyrights for creative expressions, trademarks for brand identity, and trade secrets for confidential business information. In the modern global economy, the concept has expanded to include Geographical Indications and the protection of traditional knowledge, particularly relevant in the context of indigenous systems. The overarching goal of an IPR regime is to foster an environment where creativity and innovation can flourish while ensuring that the resulting knowledge eventually enters the public domain, thereby enriching the global collective wisdom and driving the progress of humanity.

1.2. Concept of Indian Knowledge Systems: The Indian Knowledge Systems (IKS) represent a comprehensive and multidisciplinary ecosystem of knowledge that has evolved over millennia on the Indian subcontinent. Unlike fragmented modern disciplines, IKS is characterized by a holistic and interconnected approach, where science, philosophy, art, and ethics are deeply integrated. It encompasses a vast array of subjects, including Ayurveda (medicine), Arthaśāstra (governance and economics), Vāstu Śāstra (architecture), Gaṇita (mathematics), and various linguistic and spiritual traditions. At its core, IKS is rooted in the "Jñāna-Vijnana" tradition, which balances theoretical

wisdom with practical, experiential application, aiming for the well-being of the individual, society, and the environment simultaneously.

A defining feature of IKS is its emphasis on sustainability and the symbiotic relationship between humans and nature. This is evident in traditional agricultural practices, water management systems, and metallurgical techniques that were remarkably advanced for their time. Knowledge in this system was traditionally transmitted through the Guru-Shishya Parampara and documented in extensive Sanskrit and regional manuscripts. In the contemporary world, IKS is being rediscovered not as a relic of the past, but as a source of "timeless relevance" that offers indigenous solutions to global challenges like climate change, mental health, and ethical governance, provided it is validated through modern scientific inquiry.

2. Research Methodology: The research methodology for exploring the prospects of Intellectual Property Rights (IPR) in Indian Knowledge Systems (IKS) is primarily rooted in a qualitative and descriptive approach, utilizing a wide array of secondary data sources. Since the subject involves ancient traditions and contemporary legal frameworks, the methodology focuses on the systematic analysis of existing records, legislative texts, and documented heritage rather than primary field experiments.

2.1. Objective of study:

- 1) To assess the current legal status of traditional Indian knowledge within the existing national and international IPR frameworks.
- 2) To identify the vulnerabilities of IKS to misappropriation and biopiracy by external commercial entities and foreign patent offices.
- 3) To evaluate the effectiveness of the Traditional Knowledge Digital Library (TKDL) as a defensive tool in preventing the grant of wrongful patents.
- 4) To explore the potential for Sui Generis (unique) legislation that recognizes collective and communal ownership instead of individual-centric patent laws.
- 5) To analyze the role of Geographical Indications (GI) in protecting and promoting traditional Indian crafts, textiles, and agricultural products.
- 6) To examine the "Access and Benefit Sharing" (ABS) mechanisms to ensure that indigenous communities receive fair compensation for their heritage.

2.2. Significance of Study: Studying Intellectual Property Rights (IPR) in India is critical for driving the nation's transition into a global knowledge economy. It equips innovators, startups, and businesses with the legal knowledge to protect creations, commercialize ideas, and attract Foreign Direct Investment (FDI), ultimately fueling economic growth and fostering a robust domestic culture of research and development.

- ❖ **Prevention of Biopiracy:** It creates a robust legal shield against the unauthorized patenting of indigenous resources, such as medicinal plants or traditional recipes, by foreign entities.
- ❖ **Economic Empowerment:** By utilizing Geographical Indications (GI) and trademarks, local artisans and farmers can command higher prices for authentic traditional products in international markets.
- ❖ **Access and Benefit Sharing (ABS):** It ensures that a fair share of the profits generated from commercializing traditional knowledge is returned to the original tribal or local communities who preserved that wisdom.
- ❖ **Global Recognition and Validation:** Modern IPR frameworks encourage the scientific validation of ancient practices, elevating "traditional lore" to "globally recognized science."

- ❖ Incentive for Innovation: Protecting IKS-based inventions encourages modern Indian scientists to look toward their own heritage for sustainable solutions in pharmaceuticals, agriculture, and environmental management.
- ❖ Cultural Sovereignty: It asserts India's ownership over its intellectual heritage, ensuring that the nation's "soft power" is legally protected and strategically managed.
- ❖ Development of Sui Generis Models: Studying this relationship helps in drafting unique laws that recognize "collective ownership," which is often ignored by standard individual-centric patent laws.
- ❖ Sustainability Solutions: Many IKS practices are inherently eco-friendly; protecting these through IPR promotes a global shift toward sustainable and ethical consumption patterns.

3. Analysis of the Development of IPRs in IKSs: Indian Knowledge Systems (IKS) encompass the traditional knowledge, practices, innovations, and cultural heritage developed over thousands of years in fields such as Ayurveda, Yoga, agriculture, metallurgy, mathematics, astronomy, architecture, handicrafts, and biodiversity conservation. As globalization and technological advancements increase the commercial value of traditional knowledge, the protection of Intellectual Property Rights (IPR) has become essential to prevent misuse, ensure equitable benefit-sharing, and promote innovation. The development of IPR in Indian Knowledge Systems presents significant opportunities for preserving cultural heritage while fostering sustainable economic growth.

3.1. Analysis of Legal and Statutory Frameworks: The core of the secondary research involves a detailed examination of national and international legal instruments. This includes the study of the Indian Patents Act (1970), specifically the provisions that exclude traditional knowledge from patentability to prevent misappropriation. Internationally, the methodology incorporates a review of WIPO (World Intellectual Property Organization) guidelines and the TRIPS Agreement to identify how Indian systems align with or diverge from global intellectual property standards.

3.2. Utilization of the Traditional Knowledge Digital Library (TKDL): A significant portion of the methodology is dedicated to the study of the TKDL as a unique secondary data repository. By reviewing documented cases where the TKDL was used to thwart wrongful patent claims in the United States and Europe, the study establishes a factual basis for the defensive capabilities of modern IPR tools in protecting IKS.

3.3. Review of Policy and Academic Literature: The methodology further extends to the analysis of official policy documents and scholarly publications. This includes Annual Reports from the Ministry of AYUSH and the Controller General of Patents, Designs, and Trade Marks, which provide statistical data on Geographical Indications (GI) and traditional medicine registrations. This literature review helps in synthesizing theoretical perspectives on "Sui Generis" (unique) systems and the ethical implications of documenting oral traditions that have been passed down through generations.

3.4. Integration of Historical and Digital Archives: Finally, the research explores historical manuscripts and modern digital archives to trace the evolution of specific knowledge sets. By comparing ancient texts like the Charaka Samhita with contemporary scientific journals, the methodology seeks to validate the continuity and "inventive step" potential of traditional systems. This holistic reliance on secondary data ensures a multi-dimensional understanding of how India can legally and strategically safeguard its intellectual heritage in a rapidly evolving global economy.

3.5 Analysis of the Role of Geographical Indications: Geographical Indications (GIs) are a form of Intellectual Property Rights (IPR) that identify products originating from a specific

geographical region, where their quality, reputation, or other characteristics are essentially linked to that place of origin. In India, GIs are protected under the Geographical Indications of Goods (Registration and Protection) Act, 1999. GI registration plays a crucial role in preserving traditional knowledge, cultural heritage, and the economic interests of local producers by preventing unauthorized use of regional product names.

GI protection safeguards traditional crafts, textiles, and agricultural products from imitation and misuse. It legally recognizes the unique skills, techniques, and cultural practices that have been passed down through generations, thereby preserving India's rich heritage. GI registration prevents unauthorized producers from using the names of well-known regional products. This reduces counterfeiting and protects the authenticity and reputation of genuine products in domestic and international markets. Many Indian handicrafts have gained national and international recognition through GI protection. Examples include: Madhubani Paintings (Bihar), Channapatna Toys (Karnataka), Blue Pottery of Jaipur (Rajasthan), Bidriware (Karnataka). GI recognition enhances market visibility and preserves traditional craftsmanship.

India's handloom and textile sector greatly benefits from GI protection. Products such as: Banarasi Brocades and Sarees (Uttar Pradesh), Kanchipuram Silk Sarees (Tamil Nadu), Pochampally Ikat (Telangana), Muga Silk (Assam) receive legal protection, ensuring authenticity and improving consumer confidence. GI registration strengthens the market value of region-specific agricultural products by highlighting their unique quality and origin. Examples include: Darjeeling Tea (West Bengal), Basmati Rice (specific regions of North India), Alphonso Mango (Maharashtra), Nagpur Orange (Maharashtra). These products enjoy premium pricing due to their recognized geographical identity.

3.6. To Examine the "Access and Benefit Sharing" (ABS) Mechanisms: Access and Benefit Sharing (ABS) is a legal and policy framework that regulates access to biological resources and associated traditional knowledge while ensuring that the benefits arising from their utilization are shared fairly and equitably with the indigenous and local communities that have conserved and developed them. In India, ABS is primarily governed by the Biological Diversity Act, 2002 (replaced by the Biological Diversity (Amendment) Act, 2023) and is aligned with the Convention on Biological Diversity (CBD) and the Nagoya Protocol. ABS serves as an important mechanism for protecting traditional knowledge, preventing biopiracy, and promoting sustainable development.

4. Results and Discussion: Indian Knowledge Systems (IKS) encompass the traditional knowledge, practices, innovations, and cultural heritage developed over thousands of years in fields such as Ayurveda, Yoga, agriculture, metallurgy, mathematics, astronomy, architecture, handicrafts, and biodiversity conservation. As globalization and technological advancements increase the commercial value of traditional knowledge, the protection of Intellectual Property Rights (IPR) has become essential to prevent misuse, ensure equitable benefit-sharing, and promote innovation. The development of IPR in Indian Knowledge Systems presents significant opportunities for preserving cultural heritage while fostering sustainable economic growth.

1. Effectiveness of Defensive Protection: The study confirms that the Traditional Knowledge Digital Library (TKDL) has been highly effective as a defensive IPR tool. By providing "prior art" evidence to international patent offices, India has successfully thwarted hundreds of patent applications globally that sought to claim exclusive rights over well-known traditional medicinal uses of plants like Neem, Turmeric, and Ashwagandha.
2. Growth of Geographical Indications (GI): A major result is the successful shift toward using Geographical Indications as a primary tool for IKS protection. There has been a steady

increase in the registration of GI tags for indigenous products (e.g., Kangra Tea, Muga Silk, and various Ayurvedic formulations), which has legally linked the quality of these products to their Indian geographical origin, preventing international "passing off" and branding fraud.

3. Validation of the "Lab-to-Land" Model: The research indicates that scientific validation is the bridge between tradition and modern patents. This has opened new avenues in the pharmaceutical and nutraceutical sectors, allowing Indian entities to secure high-value patents for standardized herbal drugs.
4. Implementation of Benefit Sharing: The study highlights the functional success of the National Biodiversity Authority (NBA) in implementing Access and Benefit Sharing (ABS). Legal frameworks now ensure that commercial entities utilizing India's bio-resources contribute a percentage of their revenue toward the conservation of biodiversity and the socio-economic development of the local communities who provided the knowledge.
5. Need for Sui Generis Systems: A critical result is the identified gap in standard patent law regarding "collective ownership." Since IKS is often the result of centuries of community refinement, standard 20-year individual patents are often ill-suited. The study finds a strong push toward a sui generis (unique) legal model that recognizes perpetual, communal rights over traditional heritage.
6. Global Leadership in Ethical IP: The results suggest that India is emerging as a global leader in defining "Ethical Intellectual Property." By advocating for the disclosure of the country of origin in international patent applications (the "Disclosure Requirement"), India is successfully influencing global IP norms to protect the rights of the Global South against biopiracy.
7. Economic Potential of the Knowledge Economy: Finally, the study concludes that integrating IPR with IKS is a vital driver for India's Knowledge Economy. Properly protected IKS assets have the potential to contribute significantly to the GDP through exports of authentic traditional wellness products, eco-tourism, and sustainable agricultural technologies.

5. Recommendation and Suggestions: The expansion of IPR frameworks can safeguard India's traditional knowledge from unauthorized commercialization and biopiracy. Mechanisms such as the Traditional Knowledge Digital Library (TKDL) have already helped prevent the wrongful patenting of Indian medicinal knowledge. Integrating traditional knowledge with modern scientific research can generate innovative products and technologies. Intellectual property protection encourages researchers and entrepreneurs to invest in developing herbal medicines, organic farming techniques, and eco-friendly technologies. Proper IPR protection enables local communities, artisans, and innovators to commercialize traditional products through patents, geographical indications (GIs), trademarks, and copyrights. This enhances rural livelihoods and contributes to India's economy.

IPR helps preserve India's diverse cultural traditions by legally recognizing indigenous knowledge and ensuring that communities retain ownership over their cultural expressions and practices. International recognition of Indian traditional products through Geographical Indications (GIs) enhances their market value and strengthens India's position in global trade. Products such as Darjeeling Tea, Banarasi Saree, and Kanchipuram Silk demonstrate the benefits of GI protection. A well-developed IPR system ensures that indigenous communities receive fair compensation and benefit-sharing from the commercial use of their knowledge. This promotes social justice and sustainable development.

Digital databases and documentation initiatives facilitate the preservation and authentication of traditional knowledge, reducing the risk of knowledge loss and strengthening legal protection

against misappropriation. Government initiatives such as the National IPR Policy, Startup India, Make in India, and the National Education Policy (NEP) 2020 encourage research, innovation, and the integration of Indian Knowledge Systems into higher education and industry.

1. **Development of Sui Generis Legislation:** India should enact a unique (sui generis) legal framework that recognizes "Collective Ownership." Unlike standard patents that reward individual inventors for a limited time (20 years), this system should protect communal knowledge that has been passed down through generations, ensuring it remains the perpetual property of the originating community.
2. **Expansion of the Traditional Knowledge Digital Library (TKDL):** The scope of the TKDL should be broadened beyond codified texts (like Ayurveda or Unani) to include "Oral Traditions" and tribal medicinal practices. Digital documentation of these undocumented practices acts as an essential "prior art" shield, preventing foreign entities from claiming "novelty" on existing Indian wisdom.
3. **Mandatory Disclosure of Origin:** India must continue to advocate at the World Intellectual Property Organization (WIPO) for a global mandate requiring all patent applicants to disclose the source of any biological resources or traditional knowledge used. This "Disclosure Requirement" is the most effective way to track and stop international biopiracy.
4. **Scientific Validation and Standardization:** To move from "traditional lore" to "global patents," there must be increased funding for the clinical validation of IKS. By proving the efficacy of traditional treatments through modern scientific protocols, India can secure high-value "Product Patents" in the global pharmaceutical and nutraceutical markets.
5. **Strengthening Access and Benefit Sharing (ABS):** The process for commercial entities to share profits with local biodiversity providers must be simplified and strictly enforced. Utilizing blockchain technology to track the commercial journey of a bio-resource—from the forest to the pharmacy—can ensure that tribal and rural communities receive their fair share of royalties automatically.
6. **Promotion of Geographical Indications (GI) for Rural Economy:** A systematic effort should be made to identify and register more GI tags for indigenous agricultural products and traditional crafts. This not only protects the "brand" of the region but also prevents low-quality counterfeits from devaluing authentic Indian heritage in global markets.
7. **Establishment of IKS-IPR Incubation Centers:** Dedicated hubs should be created to help traditional practitioners, Vaidyas, and rural innovators navigate the complex patent filing process. These centers would bridge the gap between "traditional expertise" and "legal expertise," helping local innovators monetize their ancestral knowledge ethically.
8. **Education and Curriculum Integration:** IPR literacy should be integrated into the study of traditional sciences (like BAMS or BHMS). Training a new generation of "Interdisciplinary Professionals" who understand both the sanctity of IKS and the rigor of IPR law is vital for long-term sovereignty.

Conclusion: The conclusion of the study on the prospects of Intellectual Property Rights (IPR) within the Indian Knowledge Systems (IKS) underscores a pivotal moment in India's journey toward becoming a global knowledge superpower. The integration of these two seemingly disparate domains—one rooted in ancient, holistic, and communal traditions and the other in modern, individualistic, and commercial legalities—is no longer a choice but a strategic necessity. The findings clearly indicate that while India has made significant strides in defensive protection through the Traditional Knowledge Digital Library (TKDL), the true potential of IKS lies in its

proactive transformation into a source of global innovation. By successfully defending its bio-resources against international biopiracy, India has laid the groundwork for a more sophisticated regime that balances the preservation of cultural heritage with the demands of a competitive global economy.

Ultimately, the future of IPR in the context of IKS depends on the ability of policymakers to move beyond the constraints of standard Western legal frameworks. The study emphasizes that the "one-size-fits-all" approach of traditional patent law is insufficient for the unique nature of Indian wisdom. The path forward requires the robust implementation of sui generis systems that recognize collective ownership and ensure that the fruits of commercialization are shared equitably with the original custodians of the knowledge. This "Access and Benefit Sharing" model serves as a blueprint for ethical development, ensuring that the modernization of traditional knowledge does not lead to the exploitation of the communities that have preserved it for centuries.

In conclusion, the synergy between IKS and IPR offers a unique opportunity to present a sustainable and holistic alternative to the world. Whether through the scientific validation of Ayurvedic medicine, the protection of indigenous agricultural practices, or the promotion of traditional crafts via Geographical Indications, India is redefining the boundaries of "Intellectual Property." By bridging the gap between ancient manuscripts and modern laboratories, India can ensure that its vast intellectual capital is legally protected, scientifically validated, and economically productive. This transition from being a "custodian of the past" to a "creator of the future" will not only secure India's cultural sovereignty but also provide the global community with ethical, time-tested solutions for health, environment, and social well-being.

References:

1. Ministry of AYUSH. (2023). National Ayush Mission: Strategy for the Promotion and Protection of Traditional Knowledge. Government of India. <https://www.ayush.gov.in>
2. Gupta, V. K. (2011). Protecting India's Traditional Knowledge. *Journal of Intellectual Property Rights (JIPR)*, 16(1), 5-15.
3. Sahai, S. (2003). The Importance of Ethnobotany in the Context of Intellectual Property Rights. New Delhi: Gene Campaign Research Series.
4. CSIR-TKDL Unit. (2024). Traditional Knowledge Digital Library (TKDL): A Database of Indian Medical Heritage. Council of Scientific and Industrial Research. <https://www.tkdil.res.in>
5. Department for Promotion of Industry and Internal Trade (DPIIT). (2016). National Intellectual Property Rights Policy: Creative India; Innovative India. Ministry of Commerce and Industry, Government of India.
6. Dutfield, G. (2001). TRIPS-related Aspects of Traditional Knowledge. *Case Western Reserve Journal of International Law*, 33(2), 233-275.
7. National Biodiversity Authority (NBA). (2020). Guidelines for Access and Benefit Sharing (ABS) for Biological Resources in India. NBA India Technical Report.
8. World Intellectual Property Organization (WIPO). (2025). Traditional Knowledge and Intellectual Property: Background Brief. <https://www.wipo.int/tk/en/Journal>
9. Kala, C. P. (2006). Preserving Ayurvedic Heritage and Intellectual Property Rights in India. *Current Science*, 90(8), 1060-1065.
10. Saha, R. (2022). Geographical Indications and Local Communities: A Study of Indian Handlooms and Handicrafts. Indian Council for Research on International Economic Relations (ICRIER).

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