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INTELLECTUAL PROPERTY RIGHTS AND THE INDIAN KNOWLEDGE SYSTEM: ANCIENT ROOTS, MODERN CONFLICTS, AND SUI GENERIS FUTURES

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Abstract: *This paper interrogates whether ancient India possessed functional equivalents of modern intellectual property rights (IPR) and how those practices should inform twenty-first-century governance of traditional knowledge (TK). Modern IPR is structured around individual authorship, exclusivity, and time-bound monopoly rights. By contrast, the Indian Knowledge System (IKS) developed through plural, lineage-based, and ethically constrained transmission spanning Ayurveda, mathematics, astronomy, performing arts, and spiritual-philosophical traditions. Using a doctrinal-historical method with comparative references to international regimes (TRIPS Agreement, CBD, Nagoya Protocol) and Indian policy instruments (TKDL, PPV&FR Act, Biological Diversity Act), the paper maps three principal claims. First, although antiquity lacked codified IPR, it maintained robust proto-protective practices attribution, secrecy, restricted pedagogy, and oath-bound ethics that collectively preserved integrity and controlled misuse. Second, contemporary biopiracy disputes (turmeric, neem, basmati) expose structural incompatibilities between Western patent standards and communal, context-dependent TK; India's TKDL demonstrates that documenting prior art can mitigate biopiracy but cannot, on its own, deliver distributive justice. Third, a layered policy pathway grounded in the dharmic concept of knowledge as custodial stewardship rather than alienable property offers a normatively coherent route to protect living knowledge systems while remaining interoperable with global trade law.*

IndexTerms *Traditional Knowledge; Indian Knowledge System; Intellectual Property Rights; TRIPS; TKDL; Biopiracy; Sui generis; Dharma; Functional Equivalence*

I. INTRODUCTION

Intellectual Property Rights (IPR) are the legal infrastructure of modern knowledge economies, granting creators time-bound exclusivity to catalyse innovation and disclosure. Patents, copyrights, trademarks, geographical indications, plant variety protection, and trade secrets all operationalise the same basic logic: individual authorship or inventorship, novelty, and enforceable exclusion. However, this architecture sits uneasily with Traditional Knowledge (TK), which is cumulative, intergenerational, and intimately tied to community lifeworld rather than to discrete inventors (WIPO, 2011).

The Indian Knowledge System (IKS) is a civilizational repository encompassing Ayurveda and Rasashastra (medicine and alchemy), Jyotiṣa (astronomy), Gaṇita (mathematics), architecture, music and dramaturgy, philosophy, and jurisprudence. Knowledge historically moved through oral transmission, lineage (paramparā), and ethical oaths, often with restricted instruction to worthy disciples. Core practices textual attribution, secrecy in esoteric domains, and duty-based governance protected integrity and prevented misuse without positing alienable private 'ownership' in the modern sense (Gupta, 2002; Kane, 1962).

This paper asks a pointed question: Did ancient India possess a system of knowledge protection? Strictly, no codified IPR statutes existed. Functionally, however, the ecosystem exhibits proto-protective mechanisms recognition (attribution), controlled access (restricted teaching and secrecy), and normative boundaries (oaths, dharma) that resonate with the goals of today's IPR and TK regimes. The contemporary salience is acute. Contests over turmeric wound-healing, neem extracts, and basmati rice demonstrate that conventional patent tests (novelty, inventive step) can ratify biopiracy when TK is undocumented or mischaracterised (Shiva, 2001; Dutfield, 2000). India's Traditional Knowledge Digital Library (TKDL) addresses this by translating

classical texts into patent-examiner taxonomies to establish prior art but documentation alone cannot provide equitable benefit-sharing or community custodianship (WIPO, 2011).

The paper proceeds in the following order: it first reviews the relevant literature on TK and IPR (Section II); it then elaborates the methodology and analytical framework, including the concept of functional equivalence (Section III); it analyses IKS practices as proto-IPR (Sections IV and V); it develops the original argument that dharma constitutes a coherent normative alternative to the commodification logic of IPR (Section VI); it examines modern IPR challenges and India's institutional responses (Section VII); it proposes a condensed sui generis policy pathway (Section VIII); and it concludes with a synthesis of findings (Section IX). The stakes are clear: without a rebalanced framework, TK either remains unprotected or is privatised in ways that sever knowledge from its social ecology.

II. REVIEW OF LITERATURE

2.1 Traditional Knowledge and IPR: From Biopiracy to Documentation

Foundational TK scholarship emphasises that community knowledge is cumulative, place-based, and often undocumented, making it vulnerable to biopiracy the appropriation of biological resources and related know-how through patents that meet formal criteria yet fail substantive justice (Posey and Dutfield, 1996; Dutfield, 2000). Early controversies over turmeric, neem, and basmati catalysed legal and political mobilisation in India and globally (Shiva, 2001). These disputes exposed two design flaws in the patent system: first, novelty can be 'manufactured' where examiners lack access to non-Western corpora; and second, inventorship erases the intergenerational authorship intrinsic to TK.

India's policy response particularly the TKDL addresses the documentation gap by converting Sanskrit, Arabic, Tamil, Persian, and Urdu medical and botanical sources into searchable prior art classifications (WIPO, 2011). TKDL has reportedly helped pre-empt or defeat numerous questionable patent applications. However, scholars consistently acknowledge that defensive protection (preventing others' patents) is not equivalent to positive protection (guaranteeing community control and benefits) (Dutfield, 2000; WIPO, 2011). This distinction between defensive and positive protection remains undertheorised in Indian policy discourse.

2.2 Global Regimes: TRIPS, CBD, and Nagoya Protocol

The TRIPS Agreement integrates IPR into the WTO, entrenching minimum standards for patents, trademarks, and copyrights. While TRIPS provides limited flexibility for biodiversity and public interest, its core logic favours private, exclusive rights and individual inventorship (Correa, 2001). Counterbalancing forces arise in environmental and biodiversity law: the Convention on Biological Diversity (CBD, 1992) recognises national sovereignty over genetic resources and promotes conservation, sustainable use, and equitable benefit-sharing. The Nagoya Protocol (2010) operationalises Access and Benefit-Sharing (ABS) through prior informed consent and mutually agreed terms.

WIPO's Intergovernmental Committee (IGC) on Intellectual Property, Genetic Resources, Traditional Knowledge and Folklore has pursued international legal instruments for TK and traditional cultural expressions, including options for both defensive and positive protection. However, consensus has remained elusive because of divergences between user-countries and provider-countries of genetic resources, and between TK's communal ontology and IPR's individualist design (WIPO, 2011). Post-Nagoya implementation experience (2014 onwards) has further exposed the limitations of ABS frameworks in the face of corporate power asymmetries, a dimension underexplored in earlier scholarship (Gervais, 2021).

2.3 Comparative Antiquity: Authority, Ethics, and Secrecy

Comparative histories demonstrate that antiquity preserved knowledge through authority, ethics, and secrecy rather than proprietary exclusion. Chinese acupuncture lineages, Greek mathematical schools, and Egyptian medical papyri anchored knowledge in reputational economies and restricted instruction (Dutfield, 2000; Riddle, 1992). These analogues underscore a methodological caution: it is analytically unsound to retroject modern rights-concepts into ancient contexts. What is feasible and valuable is to identify functional alignments where secrecy maps onto trade secrets, attribution onto moral rights, and restricted teaching onto licensing and to examine what governance purposes these alignments served.

2.4 IKS Scholarship: Transmission, Attribution, and Ethics

IKS literature identifies four repeating features with protective effects. First, attribution in classical texts constructs reputational claims akin to moral rights. Second, restricted pedagogy limits diffusion without community authorisation. Third, secrecy in esoteric domains serves as an informal barrier against misuse. Fourth, dharma-based ethics binds knowledge to welfare and non-harm (Gupta, 2002; Kane, 1962; Olivelle, 2013). These mechanisms are not 'rights' in the Hohfeldian sense of claim-rights enforceable by the state, but they are governance tools serving several aims of modern IPR and ABS regimes. The existing literature has documented these features descriptively; what remains underdeveloped is a systematic theoretical account of how and why they constitute functional equivalents of IPR an account this paper provides in Section V.

2.5 Identified Gaps

Three gaps persist in the literature and are addressed by this paper. First, although biopiracy and TKDL are extensively documented, few works systematically theorise how ancient Indian practices constitute proto-IPR in terms of function rather than form, and fewer still ground that theorisation in explicit methodological criteria. Second, the ethics-based stewardship embedded in IKS the dharmic framework has not been developed as a standalone normative alternative to the commodification logic of IPR, a lacuna this paper addresses directly. Third, policy debates consistently over-identify documentation as a cure-all, undertheorising benefit-sharing and community custodianship as fiduciary obligations rather than mere entitlements.

III. METHODOLOGY

This study adopts a doctrinal-historical method, a recognised approach in jurisprudential scholarship that examines legal texts, authoritative sources, and institutional practices to identify the normative principles operative within a given legal order (Birks, 2000; Twining, 2009). The doctrinal dimension involves systematic analysis of primary instruments the TRIPS Agreement, the Convention on Biological Diversity, the Nagoya Protocol, the PPV&FR Act (2001), and the Biological Diversity Act (2002) alongside peer-reviewed scholarship on TK governance and IPR theory. The historical dimension excavates classical Indian texts, pedagogical practices, and ethical frameworks to identify knowledge governance mechanisms operative in pre-colonial India.

The paper's central analytical operation is the concept of functional equivalence: the proposition that ancient Indian practices performed governance functions analogous to those performed by modern IPR categories, without positing identical legal form or institutional structure. Functional equivalence is established by three explicit criteria. First, the ancient practice must have served an identifiable governance purpose such as preventing misuse, establishing authorship, restricting access to authorised parties, or ensuring accountability for knowledge application. Second, that governance purpose must correspond to a recognised function of a modern IP category, as analysed in the theoretical literature on IPR justifications. Third, the correspondence must be supported by both textual evidence from IKS sources primary texts in authoritative translation and established secondary scholarship. Where a correspondence can only be asserted without meeting all three criteria, it is marked as analogical suggestion rather than analytical claim.

This approach is explicitly non-anachronistic. The paper does not claim that ancient India 'had' IPR, that ancient practitioners understood themselves to be exercising rights in any jurisprudential sense, or that historical practices can be imported unchanged into contemporary policy. The claim is the more modest and defensible one: that the underlying governance problems which IPR addresses were recognised and managed in IKS through different, culturally appropriate mechanisms, and that understanding those mechanisms can inform the design of more contextually legitimate contemporary frameworks.

The analysis proceeds in four steps: (i) conceptual mapping of IPR functions and IKS governance practices; (ii) synthesis of literature on TK and international frameworks; (iii) application of the functional equivalence criteria to IKS practices using primary textual attributions, pedagogical records, and ethical constraints as analytical proxies; and (iv) policy evaluation of existing instruments and proposals for a sui generis pathway. Sources are restricted to verifiable legal instruments and peer-reviewed scholarship with traceable publication details. The paper acknowledges epistemic limits: it does not claim archaeological certainty, and where ancient evidence is ambiguous or contested, that ambiguity is flagged rather than resolved by assertion.

IV. INDIAN KNOWLEDGE SYSTEMS IN ANTIQUITY

4.1 Vedas, Shastras, and Sutras as Repositories of Knowledge

The intellectual heritage of India is embedded in a vast corpus of Vedic and post-Vedic literature. The Rigveda and subsequent Vedas compiled hymns, rituals, cosmology, and philosophical reflections, while the Shastras and Smritis codified jurisprudence, medicine, mathematics, and statecraft. Texts such as the Charaka Samhita (Ayurveda), the Sushruta Samhita (surgery), the Arthashastra (statecraft and economics), and the Natyashastra (performing arts) illustrate the breadth of the IKS. Unlike modern scientific papers, these texts present knowledge not as individual creation but as continuation of lineages what sages taught their disciples, preserved and elaborated across generations (Olivelle, 2013; Sharma, 1981).

The Sutra tradition condensed elaborate doctrines into mnemonic aphorisms designed for oral retention and faithful transmission. Panini's Ashtadhyayi codified Sanskrit grammar in approximately 4,000 concise sutras, achieving a formal precision comparable to modern rule-based systems (Cardona, 1997). The Sutra tradition reflects an implicit mechanism of safeguarding authenticity: mastery required initiation into interpretive frameworks, ensuring that misuse or distortion could be identified and corrected by lineage authorities (Gupta, 2002).

4.2 Disciplinary Scope of IKS

The Indian Knowledge System extended beyond philosophy and religion to encompass empirical sciences and practical arts. Ayurveda developed systematic approaches to health, nutrition, and pharmacology; Rasashastra studied alchemy, minerals, and metallurgy; Jyotisha combined astronomy with calendrical applications; Ganita advanced arithmetic, algebra, and geometry, predating several Greek formulations; and the Natyashastra synthesised performing arts, psychology, and aesthetics into a unified science of performance (Staal, 1988). These fields reflect an epistemic ecology in which knowledge was integrated into life practices, community rituals, and ethical frameworks, rather than compartmentalised into narrow domains.

4.3 Gurukul Pedagogy and Restricted Transmission

The gurukul system functioned as the institutional foundation for knowledge transfer. Students (śiṣyas) resided with teachers (gurus), learning through oral instruction within a relationship governed by strict ethical obligations. Importantly, not all aspirants were admitted: entry required demonstrated moral character, discipline, and the undertaking of initiation vows. This created an implicit filtering mechanism knowledge circulated only within authorised lineages, effectively restricting access to those who had demonstrated ethical fitness (Kane, 1962). The practice resembles the logic of modern licensing or confidentiality agreements, though grounded in ritual and dharma rather than enforceable legal contract. Esoteric knowledge in Ayurveda and Rasashastra was transmitted in coded form, decipherable only with a guru's oral guidance a practice that functioned as a trade secret in all but legal form (Gupta, 2002).

V. PROTO-IPR CONCEPTS IN ANCIENT INDIA

5.1 Attribution in Classical Texts

Attribution is a recurring feature in Indian texts. The Charaka Samhita begins by citing the teachings of Atreya as transmitted to Agnivesha; Panini frequently invokes earlier grammarians; the Natyashastra attributes the performing arts to Bharata and to divine origins (Sharma, 1981; Cardona, 1997). These chains of authorship and lineage perform two governance functions: recognition of intellectual contribution, and assurance of authenticity. This corresponds to modern moral rights under copyright law, which guarantee attribution and protection against distortion of the work. Unlike Western IPR, attribution was not tied to profit or monopoly, but to reputation and dharma: it anchored knowledge within a moral community, discouraging plagiarism or distortion. The Sanskrit tradition of namaḥ prefaces (salutations to the teacher) in scholarly texts reflects this ethos of obligatory acknowledgement as a matter of intellectual and ethical practice.

Applying the functional equivalence criteria: the practice served a governance purpose (establishing authorship and assuring authenticity), that purpose corresponds to the moral rights function of copyright (attribution and integrity), and the correspondence is supported by textual evidence and established scholarship. Accordingly, attribution in IKS satisfies all three criteria and may be characterised as a functional equivalent of moral rights.

5.2 Restricted Knowledge and Secrecy

Specific domains of knowledge were intentionally guarded. Alchemy (Rasashastra) provided formulae for metals, medicines, and elixirs, but texts often concealed exact processes through cryptic or symbolic descriptions. Similarly, mantras and tantric rituals were accessible only after formal initiation (dīkṣā). The rationale was twofold: prevent misuse and preserve sanctity (Gupta, 2002). A disciple might be permitted to use a mantra for healing but prohibited from deploying it for harm or private profit knowledge 'licensed' for ethical purposes only. This resembles trade secrets or restricted licences, in which disclosure is limited to authorised parties under conditions of trust and binding obligation.

Applying the criteria: the practice served the governance purpose of restricting access to authorised parties and preventing commercial misuse; that purpose corresponds to the trade secrets function of protecting commercially and socially valuable information from unauthorised disclosure; and the correspondence is supported by Gupta (2002) and primary textual evidence from Rasashastra literature. The functional equivalence with trade secrets is the strongest of the analogies advanced in this paper.

5.3 Oaths and Ethical Restrictions

Medical students in Ayurveda took vows analogous in structure to the Hippocratic Oath. The Charaka Samhita prescribes that the physician shall conduct themselves with purity and honesty, and shall not use their knowledge for the destruction of life (Sharma, 1981). This ethic effectively constrained the scope of knowledge use a parallel to terms-of-use clauses in licensing regimes. Similarly, dharma governed artistic and ritual practices, demanding that knowledge be deployed for collective welfare rather than private profit. The guru acted as licensor, the disciple as licensee, and dharma as the enforceable standard not enforceable by state courts, but by community sanction, expulsion from lineage, and cosmological consequence.

5.4 Collective Custodianship

A defining feature of IKS is its collective authorship: Vedic hymns, Ayurvedic formulations, and mathematical insights were rarely attributed to a single individual. Instead, they were framed as revelations (śruti) or community inheritances (smṛti). This reflects a custodial model in which the community, not the individual, is the ultimate steward of knowledge. This communal ontology directly conflicts with Western IPR but aligns with contemporary calls for community intellectual property models and the concept of collective rights in the Convention on Biological Diversity (Dutfield, 2000; Posey and Dutfield, 1996).

5.5 Comparative Perspective

Other ancient civilisations developed comparable mechanisms, reinforcing the view that governance problems around knowledge protection are universal even if solutions are culturally specific. In China, acupuncture techniques were transmitted within family lineages and guarded against outsiders through initiation practices. In Greece, Pythagorean and Platonic schools demanded secrecy among disciples and restricted access to advanced doctrine (Dutfield, 2000). In Egypt, priestly orders safeguarded medicinal papyri within institutional hierarchies (Riddle, 1992). India's system is distinctive, however, in embedding protection within ethical-dharmic obligations that extended beyond institutional hierarchy to cosmological duty producing a normative framework that was simultaneously more pervasive and more difficult to enforce through external coercion.

5.6 Analytical Discussion

Ancient India lacked formal codified IPR but fostered a proto-IPR ecosystem through four mechanisms attribution as moral rights; restricted pedagogy and secrecy as trade secrets; ethical oaths as licensing conditions; and collective custodianship as community intellectual property each of which satisfies the three criteria of functional equivalence established in the methodology. These mechanisms preserved integrity, prevented misuse, and reinforced accountability in ways that resonate directly with the governance functions of modern IPR. The key distinction is one of legal form rather than social purpose: modern IPR enforces these functions through state-backed exclusionary rights and litigation, whereas IKS enforced them through community sanction, lineage exclusion, and dharmic obligation. This distinction has significant implications for policy: any sui generis framework for TK must engage with both dimensions of enforcement, not merely translate IKS practices into statutory form.

VI. DHARMA AS KNOWLEDGE STEWARDSHIP: AN ALTERNATIVE NORMATIVE FRAMEWORK

A uniquely Indian contribution to the philosophy of knowledge governance is the concept of dharma as the normative foundation for knowledge stewardship. In classical Indian jurisprudence, as analysed in the Dharmashastra literature, dharma is not merely a personal moral code but a cosmological principle that regulates the relationship between knowledge, its possessor, and the community that sustains and benefits from it (Kane, 1962). Knowledge in this framework is not a commodity that the knower owns but a sacred trust held on behalf of the community and the cosmic order. The Brihadaranyaka Upanishad articulates this in the teacher's final injunction to the departing student: 'Speak the truth. Practise virtue. Do not neglect your study' an obligation that continues after the formal transmission of knowledge and cannot be dissolved by private agreement.

This reframing has fundamental implications for TK governance. The dominant IPR paradigm rests on a Lockean property logic: the creator mixes labour with ideas and thereby acquires proprietary rights in the resulting intellectual product, which may then be transferred, licensed, or alienated. TK, by contrast, rests on a custodial logic: the community inherits and refines knowledge across generations, and the obligation of each generation is preservation and ethical application rather than proprietary extraction. The dharma framework operationalises this custodial logic through three normative commitments: ahimsa (non-harm), meaning that knowledge must not be weaponised or commercialised in ways that damage the community or its ecological context; seva (service), meaning that knowledge is a means of community welfare rather than individual accumulation; and rta (cosmic order), meaning that knowledge systems are embedded in ecological and cosmological relationships that commercial appropriation disrupts.

Crucially, the dharma framework provides a criterion of legitimacy that is independent of statutory form. A patent over a traditional formulation may be legally valid under TRIPS meeting the formal criteria of novelty, inventive step, and industrial applicability and yet be normatively illegitimate under the dharma standard, because it severs knowledge from its social ecology, redirects benefits from the community to a private party, and disrupts the intergenerational transmission chain. This normative critique is more powerful than the technical objection based on lack of novelty, because it challenges the foundational legitimacy of applying the IPR paradigm to TK rather than merely contesting its technical application in specific cases. It reframes the TK debate from a question of doctrinal fit within existing IPR categories to a question of the appropriate normative basis for knowledge governance in the Indian context.

The policy implication follows directly: any sui generis framework for TK protection in India must incorporate dharmic ethics not as rhetorical decoration but as operative legal principles. Community custodianship must be understood not merely as a group property right which would replicate the commodification logic at the collective level but as a fiduciary obligation, where the community acts as trustee of knowledge for present and future generations, and for the broader ecological community in which the knowledge is embedded. This fiduciary model finds partial statutory expression in the National Biodiversity Authority established under the Biological Diversity Act (2002) and in the concept of benefit-sharing but the statutory framework has not yet been articulated in explicitly fiduciary terms. As a result, communities are positioned as claimants in adversarial proceedings rather than as trustees with recognised legal standing, and their engagement with regulatory mechanisms depends on resources and awareness that most traditional communities do not have. Reconceiving community custodianship as a fiduciary trust with attendant duties of care, accountability, and benefit distribution would provide a more coherent and contextually legitimate normative foundation for the sui generis framework proposed in Section VIII.

VII. MODERN IPR CHALLENGES AND TRADITIONAL KNOWLEDGE

7.1 The Biopiracy Problem: Three Landmark Disputes

The 1990s marked a turning point for global debate on TK and intellectual property. A series of high-profile disputes involving Indian biological resources demonstrated how modern patent frameworks could enable biopiracy the appropriation of traditional resources and know-how through patents that meet formal criteria yet fail substantive justice (Shiva, 2001; Dutfield, 2000).

The neem patent dispute arose in 1994 when the European Patent Office (EPO) granted W.R. Grace & Co. and the U.S. Department of Agriculture a patent (EP 0436257 B1) for a method of extracting stabilised neem

oil with pesticidal properties. Neem (Azadirachta indica) has been used in India for centuries for pest control and medicinal purposes, and this use was extensively documented in classical and folk literature. The patent was challenged by a coalition of Indian and international NGOs. Following opposition proceedings, the EPO Technical Board of Appeal revoked the patent in Case No. T 0426/94 on the grounds of lack of novelty and inventive step over the documented prior art (EPO, 2000). This case demonstrated how failure to recognise undocumented traditional practices could result in unjust monopolies, and catalysed India's systematic effort to document prior art.

The turmeric patent dispute arose in 1995 when two researchers at the University of Mississippi Medical Center were granted U.S. Patent No. 5,401,504 for the use of turmeric powder in wound healing. India's Council of Scientific and Industrial Research (CSIR) challenged the patent, citing Sanskrit texts including the Sushruta Samhita as evidence that this use was documented prior art. The U.S. Patent and Trademark Office (USPTO) re-examined and revoked the patent on 14 August 1997 (Re-examination No. 96/000,837), marking one of the first successful challenges to a biopiracy patent based on documented TK. The case established the evidentiary model that TKDL subsequently institutionalised.

The basmati controversy arose in 1997 when RiceTec Inc. (Texas) was granted U.S. Patent No. 5,663,484 claiming novel rice lines and grain characteristics associated with traditional Basmati varieties cultivated for generations in India and Pakistan. India challenged the patent, and while RiceTec retained some claims, core claims (1–7 and 10–13) were cancelled in 2001 following USPTO re-examination. The dispute galvanised India's efforts to seek Geographical Indication protection for Basmati rice, and registration was subsequently obtained under the Geographical Indications of Goods (Registration and Protection) Act (1999) (Correa, 2001).

These three disputes reveal a systemic pattern: modern IPR frameworks privilege documented, codified innovations while structurally overlooking oral, communal, and historically accumulated knowledge. They also reveal the disproportion of the remedy even when patents are successfully challenged, the burden of proof falls on the TK-holding country, which must invest substantial legal and financial resources to undo grants that should never have been made.

7.2 India's Defensive Response: TKDL

India's most significant institutional response to biopiracy is the Traditional Knowledge Digital Library (TKDL), established in 2001. TKDL documents over 250,000 formulations from Ayurveda, Siddha, Unani, and Yoga traditions in multiple languages, classified according to the International Patent Classification (IPC) system to make prior art accessible to patent examiners worldwide. Through access agreements with major patent offices including the EPO, USPTO, and Japanese Patent Office, TKDL has enabled examiners to identify prior art that would otherwise have been invisible. TKDL has successfully pre-empted numerous erroneous patent applications and reduced litigation costs. However, as scholars consistently note, TKDL offers only defensive protection: it prevents misappropriation but creates no positive rights for communities and includes no mechanism for benefit-sharing (Dutfield, 2000; WIPO, 2011; Gervais, 2021).

7.3 TRIPS and Structural Incompatibility with TK

The TRIPS Agreement (1994) operates on three principles that are structurally misaligned with TK. First, individual inventorship: TRIPS presupposes rights belonging to identifiable individuals or firms, whereas TK is communal and intergenerational. Second, novelty and inventive step: TK, being centuries-old, rarely meets novelty thresholds despite its ongoing utility. Third, time-limited protection: patents last twenty years, whereas TK is perpetual, sustained across generations through living communities. These incompatibilities mean TK systematically falls outside TRIPS categories. India and other developing nations have advocated for sui generis systems at WIPO and WTO, but progress has been impeded by opposition from developed nations with strong pharmaceutical and biotechnology lobbies (Correa, 2001; Gervais, 2021).

7.4 Alternative Frameworks: CBD and Nagoya Protocol

The Convention on Biological Diversity (CBD, 1992) established state sovereignty over genetic resources and promoted conservation, sustainable use, and equitable benefit-sharing. The Nagoya Protocol (2010), which entered into force in 2014, operationalises ABS through prior informed consent and mutually agreed terms. For India, the CBD and Nagoya Protocol provide leverage to frame TK as an ecological and cultural heritage issue rather than purely an intellectual property problem. However, enforcement remains uneven: power asymmetries between multinational corporations and local communities limit effectiveness, and the

Protocol's benefit-sharing mechanism has generated limited actual flows of benefits to communities in the decade since its implementation.

7.5 India's Domestic Legislative Framework

India has attempted to supplement international instruments with domestic legislation. The Biological Diversity Act (2002) incorporates ABS principles and creates mechanisms for community participation through the National Biodiversity Authority and State Biodiversity Boards. The Protection of Plant Varieties and Farmers' Rights Act (2001) uniquely recognises farmers as breeders and custodians of plant varieties an original contribution to comparative IP law. The Geographical Indications of Goods (Registration and Protection) Act (1999) enables protection of culturally linked products. These measures represent attempts at positive protection, though implementation challenges, bureaucratic complexity, and lack of community awareness often limit their practical impact.

7.6 Analytical Summary

Modern IPR challenges for TK crystallise around three structural tensions. The documentation-custodianship tension arises because TKDL secures defensive protection while risking decontextualisation of knowledge communities become passive informants rather than active custodians, and their living practices are reduced to static database entries. The global trade-local sovereignty tension arises because TRIPS enforces global uniformity while TK requires contextual, pluralist protection. The equity-access tension arises because benefit-sharing frameworks provide a normative basis but remain weak in enforcement, leaving communities structurally vulnerable. Resolving these tensions requires not merely technical reform within existing IPR categories but a normative reorientation of the kind the dharma framework provides one that reconceives community custodianship as fiduciary stewardship rather than a variant of proprietary ownership.

VIII. POLICY RECOMMENDATIONS: A LAYERED SUI GENERIS FRAMEWORK

A layered sui generis framework is necessary to protect IKS in the twenty-first century. The following three proposals are each grounded in existing statutory architecture and calibrated to the three structural tensions identified in Section VII.

Proposal 1: Amend TRIPS Article 27 Mandatory Disclosure of Origin

India should continue and intensify its advocacy, in alliance with the Like-Minded Group of biodiversity-rich nations (Brazil, South Africa, Peru, and others), for an amendment to TRIPS Article 27 requiring patent applicants to disclose the origin of any genetic resource or TK incorporated in the claimed invention, and to provide evidence of prior informed consent under the Nagoya Protocol. This amendment for which text has been developed at WIPO's IGC would operationalise the Nagoya Protocol's requirements within the global trade law framework and shift the burden of proof from TK-holding countries to patent applicants. It addresses the global trade-local sovereignty tension directly by embedding ABS compliance within the TRIPS architecture rather than maintaining it as a parallel system.

Proposal 2: Statutory Community Custodianship with Fiduciary Architecture

The Biological Diversity Act (2002) should be amended to reconceive community custodianship as a fiduciary trust rather than a mere group entitlement. The amendment should: (i) confer legal standing on community biodiversity registers as representative trustees of TK with standing to initiate legal proceedings in their own name; (ii) impose a duty of care on the National Biodiversity Authority to act in the interests of custodian communities in ABS negotiations; and (iii) establish a community benefit trust modelled on the structure of charitable trusts under the Indian Trusts Act (1882) to receive, manage, and distribute ABS revenues transparently. This proposal engages the dharmic framework developed in Section VI by translating the custodial logic of IKS governance into enforceable fiduciary obligations rather than mere regulatory entitlements.

Proposal 3: Constitutionalise TKDL with Community Governance

TKDL should be expanded beyond its current medical and yogic scope to include agricultural, ecological, craft, and oral traditions. More critically, its governance must be reformed: communities whose knowledge is documented in TKDL currently have no formal role in decisions about access, licensing, or enforcement. A community governance council with elected representation from custodian communities across the documented traditions should be established with decision-making authority over access agreements,

licensing terms, and benefit distribution. Emerging technologies including blockchain-based provenance tracking and AI-assisted classification should be adopted to improve documentation fidelity and cross-jurisdictional monitoring, but these tools must be subject to community governance rather than purely technical administration. The constitutionalising of TKDL's mandate through a parliamentary statute (rather than its current executive character) would provide greater permanence and democratic accountability.

IX. CONCLUSION

This paper has examined the intersection of Intellectual Property Rights and the Indian Knowledge System across historical, normative, and contemporary dimensions, and has advanced three principal claims.

First, ancient India did not codify IPR in statutory form, but sustained robust functional equivalents satisfying the three criteria of functional equivalence established in the methodology. Attribution in texts such as the Charaka Samhita resonates with moral rights; secrecy and restricted pedagogy in Rasashastra and Ayurveda parallel trade secrets; and ethical oaths impose restrictions functionally akin to licensing terms. Collectively, these practices preserved authenticity, safeguarded against misuse, and tied knowledge to community stewardship.

Second, modern IPR regimes are structurally incompatible with TK, not merely technically misapplied. Patent disputes over neem, turmeric, and basmati rice revealed how novelty and inventorship standards marginalise traditional practices. India's TKDL has successfully prevented wrongful patents but offers defensive protection only it creates no positive rights, no benefit-sharing, and no community governance.

Third, and most distinctively, this paper has developed the dharma framework as a normative alternative to the commodification logic of IPR. The dharmic reframing from knowledge as property to knowledge as custodial trust provides a philosophically coherent and culturally contextual basis for sui generis TK governance that goes beyond technical doctrinal reform. The proposed fiduciary reconception of community custodianship, grounded in this framework, offers a path toward governance that is both legally functional and normatively legitimate within the Indian context.

India stands at a crossroads: its rich intellectual traditions demand protection, but the prevailing IPR paradigm is structurally ill-suited to collective, ethical, and perpetual knowledge systems. The layered sui generis framework proposed here mandatory TRIPS disclosure amendment, fiduciary community custodianship, and constitutionalised TKDL governance provides a realistic path forward. Its animating principle is not the extension of IPR to TK but the recognition that knowledge rooted in dharma requires governance grounded in dharma.

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