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A COMPREHENSIVE ANALYSIS ON THE ROLE OF INTELLECTUAL PROPERTY RIGHTS ON THE PRESERVATION AND COMMERCIALIZATION OF TRADITIONAL KNOWLEDGE AMONG INDIGENOUS COMMUNITIES

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ABSTRACT:

Traditional knowledge encompasses the knowledge, inventions, and customs of indigenous and local groups across the world. Traditional knowledge is passed down orally from generation to generation, having evolved from decades of experience and being adapted to the particular culture and environment. This study looks critically at the role of Intellectual Property Rights (IPR) in the preservation and commercialization of traditional knowledge (TK) among indigenous people. While IPR frameworks like patents, trademarks, and geographical indications are intended to protect innovations and creative expressions, their application to traditional knowledge creates difficult concerns about ownership, benefit-sharing, and cultural preservation. This study investigates how intellectual property rights (IPR) systems may either empower indigenous people by providing legal protection and economic opportunity or harm their cultural legacy by commodifying traditional knowledge and encouraging misuse. This research examines the efficiency of IPR in conserving TK and the extent to which these rights match with indigenous peoples' beliefs and traditions using a review of existing literature, case studies, and legal analyses. It also investigates the difficulties indigenous groups confront while navigating the official IPR system, such as concerns of permission, collective ownership, and access to legal resources. Furthermore, the study investigates alternate models, such as sui generis systems and community protocols, to better accommodate the unique character of TK and encourage fair benefit-sharing. In India, for instance initiatives to conserve traditional medical knowledge through sui generis institutions and benefit-sharing agreements have been undertaken. However, obstacles persist in ensuring effective stakeholder engagement and fair commercialization.

The findings of this study suggest the need for a more nuanced approach to intellectual property rights that takes into account the cultural and social dimensions of traditional knowledge. It advocates for the creation of legal frameworks that are both protective and inclusive of indigenous viewpoints and rights.

Keywords: Intellectual Property Rights, Traditional Knowledge, Traditional Cultural Expressions, Indigenous Communities, Cultural Heritage, Collective ownership.

1. Introduction:

India is among the top 12 countries in the world for biodiversity. India is known for being a hotspot for crop diversity and for having a number of wild crop relatives. India has a wealth of traditional knowledge about the characteristics and use of these biological

resources due to its unique biodiversity and abundance of natural resources. "Traditional knowledge refers to knowledge acquired over time by people in an indigenous society, in one or more cultures, based on experience and adjustment to a local culture and climate, and continuously predisposed by each generation's

developments and practises". Traditional knowledge encompasses the knowledge, innovations, and customs of indigenous and local groups around the world. Traditional knowledge is passed down orally from generation to generation, having evolved from decades of experience and being tailored to the particular culture and environment. It is typically jointly held and consists of stories, music, folklore, proverbs, cultural values, beliefs, rituals, community regulations, local language, and agricultural methods, such as the production of plant species and animal breeds. It is sometimes called an oral tradition because it has been practiced, sung, danced, painted, sculpted, chanted, and performed throughout millennia. Traditional knowledge is primarily practical, particularly in agriculture, fishing, health, horticulture, forestry, and overall environmental management. Traditional information is exploited without the authorization of the indigenous peoples or groups who created and legally maintain it, and without an adequate proportion of revenues from such use. Use of the present IPR system: – The starting step should be to investigate the possibility of leveraging the exciting IPR system more creatively in order to protect the traditional knowledge of the local population and communities.

It is clear from the aforementioned arguments that the fundamental principles of traditional knowledge include:

- a) Developing a novel procedure or practice to meet a need.
- b) The method or process being passed down through the generations by custom.
- c) Limited by its values to the group or community inside a certain group or community.

The 'neem' example, where the neem tree was thought to have many uses in India, is a perfect example of what TK involves. It has been utilized for millennia in agricultural, human and veterinary medicine, hygiene, cosmetics, and as an insect and pest repellent. It was first

referenced in Indian writings more than 2,000 years ago.

2. Applicability of IPR to Traditional Knowledge:

Intellectual Property Rights (IPR) applied to Traditional Knowledge (TK) mean to adjust conventional legal protection concepts, usually created for single and corporate innovations, toward the special features of TK. Traditional Knowledge represents an aggregate of the knowledge of indigenous and local communities who have passed it from generations. It includes such different fields as traditional medicine, agriculture, biodiversity, or cultural expressions, deeply implanted in the environment and their cultural heritage.⁹⁶⁷

While traditional IPR systems, such as patents, copyrights, trademarks, and geographical indications, do protect individual inventors and creators, they are usually not well-suited for dealing with the communal, evolving, and undocumented nature of TK. The issue lies in how to guard TK against biopiracy, ensure equitable sharing of benefits, and preserve cultural heritage within the legal frameworks available. India has emerged as a forerunner in this global context, developing mechanisms that the legal system of India follows to protect TK and enhancing international efforts on TK protection.⁹⁶⁸

2.1. Need for Protection: Traditional knowledge in India spans from agriculture, medicine to biodiversity and other cultural practices spanning generations. Much of these are still undocumented and lay vulnerable to exploitation by drug and agro-chemical companies without compensating to the communities that hold and pass on this knowledge down the generations. Protecting traditional knowledge (TK) through intellectual

⁹⁶⁷ Thapa, M. (2017). Protection of traditional knowledge in genetic resources: A case study of India. In Sikkim University, I. Gulam Ahmed, & V. Mayank, Sikkim University.

⁹⁶⁸ Chatterjee, I. (n.d.). Intellectual Property rights and Traditional Knowledge - Indian perspective. <https://manupatra.com/roundup/363/articles/ipr%20and%20traditional%20knowledge.pdf>

property rights (IPR) is crucial for several reasons.⁹⁶⁹

2.1.1. Equity: The core belief behind a number of instruments for TK security is based on equity consideration. Because of the present requisition and reparation procedure, TK produces value that is not adequately recognised and compensated. In order to bring justice to largely unjust and unequal relationships, it would be crucial to preserve TK. Plant inherited assets serve as an example of this line of thinking. Orthodox farmers use and maintain plant assets that have been passed down through the generations. Their usage for planting, seed preparation, and ongoing selection of the best farmer's varieties preserves and increases the significance of plant hereditary assets. These farmers usually exchange information with one another through barter or cross-border commerce, which helps spread and increase the output of their cultivars. The main argument in this evaluation is that traditional or local farmers are not compensated for the value they provide, and there is no subsequent repayment or profit-sharing with farmers because breeders and seed businesses are not paid for the samples they get.⁹⁷⁰

2.1.2. Conservation: The importance of data for preservation purposes is the subject of the second element outlining the TK security case. Thus, the global region benefits from the preservation of biological variety in agricultural systems. IPRs can be utilized to generate income so that businesses that would otherwise have to shut down can continue. A significant loss of biodiversity would happen, for instance, if traditional farmers stopped using and reproducing their own varieties in favour of modern ones with higher yields, which would have lured them with the increased revenue.

Thus, TK safety contributes to the broader societal goals of food security, sustainable agriculture, and environmental preservation.

2.1.3. Preservation of Traditional Lifestyles: TK security serves as a tool for promoting the upholding of customs and skills that embody traditional ways of living. In this context, the concept of "security" differs greatly from that used in relation to IPRs. The preservation of TK is an essential part of humanity's cultural heritage and a fundamental part of the right to self-identification. It is also necessary for the survival of regional and traditional cultures.⁹⁷¹

2.1.4. Preventing Bio Piracy: In certain situations, the security of TK seeks to prevent the illegal use (or "bio-piracy") of traditional knowledge and to guarantee benefit sharing. For instance, the Government of India has proposed adding a provision to the TRIPS Agreement that states that patents that violate Article 15 of the CBD should not be granted in order to harmonize the two agreements. Enhancing the data that patent offices have access to for evaluating unique and creative approaches can stop patents from being granted that excessively cover traditional knowledge.⁹⁷²

2.2. Legal Mechanism in India

India has developed an array of legal instruments specifically tailored to address the specific needs of TK:

2.2.1. Biological Diversity Act, 2002: This act provides a framework for conserving biological resources and the TK associated with it. Foreign entities seeking access to biological resources or TK will be allowed only after getting permission from the NBA and with benefit-sharing with the knowledge-holding communities.

2.2.2. Traditional Knowledge Digital Library (TKDL): India has established the TKDL to

⁹⁶⁹ PROTECTION OF TRADITIONAL KNOWLEDGE UNDER INTELLECTUAL PROPERTY RIGHTS REGIME. (5 B.C.E.). In <https://cnlu.ac.in/storage/2022/08/10-Rjya.pdf>.

⁹⁷⁰ *ijalr*. (2022, December 2). *INTELLECTUAL PROPERTY RIGHTS LAW PROTECTION OF INDIGENOUS KNOWLEDGE by -Aditya Vemulakonda - ijalr*. <https://ijalr.in/volume-2/issue-2/intellectual-property-rights-law-protection-of-indigenous-knowledge-by-aditya-vemulakonda/>

⁹⁷¹ PROTECTION OF TRADITIONAL KNOWLEDGE UNDER INTELLECTUAL PROPERTY RIGHTS REGIME. (5 B.C.E.). In <https://cnlu.ac.in/storage/2022/08/10-Rjya.pdf>.

⁹⁷² <https://www.commerce.gov.in/international-trade/india-and-world-trade-organization-wto/indian-submissions-in-wto/trade-related-aspects-of-intellectual-property-rightstrips/the-relationship-between-the-trips-agreement-and-the-convention-on-biological-diversity-and-the-protection-of-traditional-knowledge-2/>

prevent foreign entities from misappropriating its traditional medicinal knowledge. The TKDL documents traditional knowledge in a standardized format accessible to patent examiners worldwide, helping prevent patents on already-known medicinal knowledge.⁹⁷³

2.2.3. Geographical Indications of Goods Act, 1999: GIs protect products that are associated with a specific geographic region. GIs prevent the use of cultural products like Darjeeling Tea and Kancheepuram Silk by other people due to the power given to communities over their product names. This Act, Protection of Plant Varieties and Farmers' Rights Act, 2001, recognizes the contributions of the Indian farmer in conserving plant genetic resources. It places rights to use and selling seeds of registered varieties over them. Moreover, it provided for benefit-sharing provisions that ensure the economic well-being of farming communities.⁹⁷⁴

2.2.4. India's policy on TK is determined in the context of international arrangements that strive to balance the conventional IPR norms with the communal nature of TK.

➤ **CBD:** This acknowledges the rights of indigenous communities to their genetic resources and TK and promotes equitable benefit-sharing.

➤ **Nagoya Protocol on Access and Benefit Sharing (ABS):** It builds upon CBD by requiring companies using genetic resources or TK to get prior informed consent and equitably share benefits with source communities.

➤ **World Intellectual Property Organization (WIPO):** WIPO has played an important role in formulating frameworks to provide support for TK within existing IPR laws and even proposed a sui generis system to recognize and protect the communal nature of TK.

⁹⁷³ About TKDL. (n.d).

<https://www.tkdl.res.in/tkdl/langdefault/Common/Abouttkdl.asp?GL=Eng>

⁹⁷⁴ Chakrabarty, S., & Hossain, K. (2024). RECOGNIZING INDIGENOUS TRADITIONAL KNOWLEDGE WITH MEDICINAL VALUE WITHIN A LEGAL FRAMEWORK: AN OVERVIEW OF THE ISSUES AND CHALLENGES WITH SPECIAL FOCUS ON INDIA. *Man in India*, 104(1-2), 41-60. <https://doi.org/10.47509/mii.2024.v104i01-2.03>

➤ **Sui Generis:** India's Approach to TK: Since traditional IPR frameworks cannot be wholly applied to TK, India has been highly focused on developing sui generis systems especially for TK. Such sui generis systems, such as the Biological Diversity Act, provide the more flexible mechanisms of protection that are in harmony with the collective and dynamic nature of TK. Databases such as TKDL, expanded legal frameworks of community participation also serve as additional protections against the misappropriation of TK and further fair economic benefits to communities.⁹⁷⁵

3. Ownership and benefit sharing:

Ownership and benefit sharing of traditional knowledge (TK) are crucial to ensure the control of indigenous and local communities over their cultural and natural resources while providing due compensation for their contributions. This concept is mainly controlled through international frameworks such as the Convention on Biological Diversity (CBD) and national laws in India, such as the Biological Diversity Act (BDA) of 2002, which outline mechanisms of recognition, protection, and distribution of benefits arising from the use of TK.⁹⁷⁶

• **Ownership of Traditional Knowledge:** TK is intrinsically collective, as often it is a matter of communities rather than of individuals. Innovations, practices, and knowledge develop over generations within communities, where it is passed down as part of shared cultural heritage. The CBD and Nagoya Protocol affirm the sovereign rights of states over their biological resources and empower indigenous communities holding collective rights over resources such that TK is held inextricably wed to community identity and livelihood.

In India, the BDA recognizes that TK is collective and offers exceptions to indigenous and local communities from some of the approvals needed to use biological resources for

⁹⁷⁵ Lakshmanan, P. K., & Lakshmanan, S. (2014). Protecting Traditional Knowledge: Can Intellectual Property Rights help? *Ancient Science*, 1(2), 30. <https://doi.org/10.14259/as.v1i2.152>

⁹⁷⁶ Protecting traditional knowledge: Can intellectual property rights help? (n.d.). *ResearchGate*. <https://doi.org/10.14259/as.v1i2.152>

traditional purposes. This approach is to respect the community-based ownership of TK by sheltering it from unauthorized access by external entities. However, it is challenging in defining who owns resources and knowledge shared across communities or regions. For example, cases where TK spans state or national borders are not easily addressed through the BDA as there is a need for further collaborative policies on shared ownership in transboundary regions.

• **Benefit Sharing Principles:** In the context of TK, benefit sharing means that the monetary and non-monetary benefits that flow from the use of biological resources and TK should be equitably shared with the communities that hold the resources. The CBD underlines the mechanism of Access and Benefit Sharing (ABS) as critical in ensuring fair compensation to the TK holders whenever their resources are used in producing commercial products or in the development of research results. This approach acknowledges the important contribution of communities throughout time to biodiversity conservation and the advancing knowledge in medicinal and agriculture practices.

The BDA specifies mechanisms for the sharing of benefits accruing from India. It stipulates that any individual or entity that intends to obtain biological resources for commercial purposes shall first obtain prior approval from the NBA and enter into Mutually Agreed Terms (MAT) with the community regarding the sharing of benefits. Benefits can take several forms:

- **Monetary Benefits:** Some of the monetary compensations may include such as direct financial payments, royalties, or profits.
- **Non-Monetary Benefits:** Such as building capacities, technology transfer, developing infrastructure, or access to health and education resources.⁹⁷⁷

• **Implementing benefit sharing: challenges and mechanisms:** Fair benefit-sharing remains a formidable challenge. One major disincentive is the knowledge gap between local communities and commercial or research entities hence usually leading to lopsided negotiations. On this front, the NBA plays a coordinating role in supervision for ensuring that agreements on benefit-sharing are both fair and transparent. The Biological Diversity Rules (2004) encourage this by laying guidelines for agreements that include PIC and MAT for accessing TK. Furthermore, in India, benefit-sharing arrangements are also based on collective and co-ownership of resources, especially when TK and biological resources are shared across communities. For example, the Act provides for collaborative frameworks to negotiate benefit-sharing terms where more than one community or states share ownership, thus ensuring that all parties are recognized in the ABS process. Legal Precedents and Case Studies India's experience with biopiracy—exemplified in cases like the patents on Neem and Turmeric by foreign companies—highlights the importance of strict benefit-sharing regulations. In these cases, traditional uses of indigenous resources were patented abroad without compensation to local communities, prompting legal challenges. These cases bring out the need for mechanisms such as the TKDL that is helping document and protect indigenous knowledge from unauthorized patenting on a global scale and to support both ownership and fair benefit-sharing.⁹⁷⁸

4. Cultural preservation and commercialization:

The connection of cultural preservation and commercialization in Traditional Knowledge (TK) under the Intellectual Property Rights (IPR) framework highlights a delicate balance between safeguarding cultural heritage and providing economic advantages to communities. Traditional knowledge, which is

⁹⁷⁷ Sanjay Kumar. (2009). Framework for Benefit Sharing Guidelines for India. In *Asian Biotechnology and Development Review* (pp. 55–88).

⁹⁷⁸ Thapa, M. (2017). Protection of Traditional Knowledge in Genetic Resources: A Case Study of India. In Sikkim University, I. Gulam Ahmed, & V. Mayank, *Sikkim University*.

ingrained in indigenous traditions and heritage, has long been shared communally and passed down through generations. This knowledge includes medicinal practices, agricultural methods, crafts, and cultural manifestations, all of which play an important role in cultural identity and sustainability. However, as worldwide interest in traditional knowledge has grown, commercialization difficulties have arisen, often without community approval, leading to illicit exploitation or "biopiracy." In response, IPR measures like as patents, copyrights, trademarks, and geographical indications (GI) provide frameworks for safeguarding traditional knowledge (TK) and promoting economic benefits for indigenous holders. For example, geographical indicators can safeguard the cultural identity of region-specific products, ensuring that profits earned from such items pass back to the source communities, thus aiding cultural preservation and economic sustainability.⁹⁷⁹

Considering the benefits, existing IPR methods are frequently incompatible with the communal and intergenerational character of TK, as they are primarily geared to protect individual or corporate ideas. This has made properly incorporating TK inside IPR systems difficult, as novelty and originality take precedence over community-shared and age-old customs. While trademarks and copyrights can assist preserve traditional symbols and artistic expressions from unlawful commercialization, they have limitations due to the legal complexities of these protections and the financial burden that legal processes impose on indigenous organizations. Sustainable commercialization techniques provide economic benefits to indigenous groups, such as the selling of non-timber forest products (NTFPs) in Madhya Pradesh, where transparent processes ensure equitable pay. Models of benefit sharing, such as those used by Kerala's

Kani tribe to obtain royalties from a pharmaceutical product developed using their traditional plant knowledge, demonstrate equitable approaches to commercialization. Initiatives such as the Traditional Knowledge Digital Library (TKDL) protect public domain knowledge from patent infringement, while money from such databases helps fund community-led conservation projects. Sustainable commercialization is further assisted by the production of medicinal plants for industrial application, which reduces ecosystem damage. The use of biotechnology, such as DNA analysis for conservation, contributes to the preservation of valuable genetic resources. In essence, this framework not only protects traditional knowledge but also economically strengthens communities, ensuring that they continue to be guardians of their natural and cultural heritage.

For example, indigenous groups frequently require assistance in monitoring usage and navigating complex trademark and copyright regimes. Furthermore, commercial interests can often conflict with the goal of preserving the integrity of traditional knowledge, especially when market-driven changes jeopardize its cultural relevance. To bridge these gaps, numerous activists and international organizations, notably the World Intellectual Property Organization (WIPO), suggest a sui generis legal framework that recognizes the uniqueness of traditional knowledge, supports fair use, and ensures equitable benefit-sharing. This strategy better aligns with indigenous beliefs by empowering communities to control and benefit from their knowledge while protecting it for future generations.⁹⁸⁰

5. ISSUES AND CHALLENGES WITH TRADITIONAL KNOWLEDGE IN IPR

The term "traditional knowledge" describes the long-standing customs and practices of some local, indigenous, or regional societies.

⁹⁷⁹ Sahai, S. & Gene Campaign. (2000). Commercialisation of Indigenous Knowledge and Benefit Sharing. In *UNCTAD Expert Meeting on Systems and National Experiences for Protecting Traditional Knowledge, Innovations and Practices* [Conference-proceeding]. https://www.iprsonline.org/desarrollo/6_India.pdf

⁹⁸⁰ Yassine, J. (2018). IP Rights and Indigenous Rights: Between Commercialization and Humanization of Traditional Knowledge. *San Diego International Law Journal*, 20, 71–92.

Traditional knowledge has frequently been transmitted orally for centuries. Myths, stories, folklore, customs, songs, and even laws are some of the ways that many forms of cultural knowledge are expressed. Some scholars do not consider "traditional knowledge" to be "knowledge," as it encompasses ideas, attitudes, and practices. Information on the use of medicine, organic and other material agriculture, manufacturing processes, designs, literature, music, rituals, and other arts and practices are all included in traditional knowledge. This broad range encompasses both practical and aesthetic information, such as methods and goods that may be applied to manufacturing or agriculture, as well as abstract cultural knowledge. Traditional knowledge is dynamic; it generates new information and evolves in response to new developments or conditions.

Since the majority of traditional knowledge and data are available in local languages, safeguarding TK is more complicated. When examining the patent applications, the patent offices find it challenging to identify this information as previous art. Individuals and commercial organisations can obtain IPR protection for TK-based ideas due to the language barrier.⁹⁸¹

Third-world nations are powerless to stop multinational firms from taking advantage of their traditional expertise. Their knowledge often goes undocumented. The knowledge cannot withstand the scrutiny of the patent offices, even in cases when it has been documented. Wealthy nations are reluctant to refuse their own companies patents on the grounds that some other countries have pre-existing traditional knowledge.⁹⁸²

Furthermore, since the majority of traditional procedures have been used for centuries and have proven to be effective over time, private entities are not unwilling to rely on them. For

instance, traditional and indigenous tribes have been using the majority of TK-based medications for many decades. The effectiveness of these medications has been established. The TK can therefore be conveniently trusted by private entities. Private companies therefore try to obtain IPR over TK-based discoveries since they can obtain dependable products without having to pay exorbitant expenses for laboratory and research and development.⁹⁸³

6. Legal case studies and International Frameworks:

The cases of Neem, Turmeric, Basmati Rice, Bt Cotton and Potato (Lay's) are major incidents in the debate over biopiracy and intellectual property rights. These cases, brought to international notice by corporate claims to patent or trademark traditionally known qualities of indigenous crops, highlight the contradiction between commercial interests and cultural preservation. Each case highlights the need of protecting traditional knowledge (TK) against unlawful use, as well as the need for international legal systems that respect and maintain indigenous communities' legacy. The cases of Neem, Turmeric, Basmati Rice, and Potato (Lay's) are major incidents in the debate over biopiracy and intellectual property rights. These cases, brought to international notice by corporate claims to patent or trademark traditionally known qualities of indigenous crops, highlight the contradiction between commercial interests and cultural preservation. Each case highlights the need of protecting traditional knowledge (TK) against unlawful use, as well as the need for international legal systems that respect and maintain indigenous communities' legacy.

6.1. Neem Case:

The Neem case, which is sometimes cited as a groundbreaking biopiracy controversy, concerned the U.S. Department of Agriculture and W.R. Grace, a U.S. company that patented

⁹⁸¹ https://www.wipo.int/edocs/pubdocs/en/wipo_pub_1049.pdf

⁹⁸² <https://docs.manupatra.in/newsline/articles/Upload/B4919708-50C0-43E6-9CC5-B712FBBA1B2D.pdf>

⁹⁸³ <https://www.sconline.com/blog/post/2018/04/23/protecting-traditional-knowledge-the-india-story-till-date/>

the pesticidal qualities of neem. Native to India, the neem tree (*Azadirachta indica*) has been utilized for millennia in Indian medicine and agriculture because of its therapeutic, fungicidal, and insecticidal qualities. Indian scientists and campaigners, such as Vandana Shiva, contested the claim in the European claim Office (EPO), arguing that the properties were not original enough to warrant patent protection because they had been a part of India's traditional knowledge for millennia. The EPO revoked the patent in 2005 after the matter was finally decided in favor of the opposition.⁹⁸⁴

6.2. Turmeric Case:

In the Turmeric case, two American-Indian scientists were granted a patent in 1995 for the ability of turmeric to heal wounds. A mainstay of Indian traditional medicine, turmeric has been used for ages as a healing agent and antimicrobial. By providing historical proof of turmeric's use in India, the Indian Council of Scientific and Industrial Research (CSIR) challenged this patent on the grounds that it was previous art. The patent was withdrawn by the United States Patent and Trademark Office (USPTO) in 1997 when it was determined that the claims were not new enough. This case is noteworthy because it was among the first to successfully challenge a biopiracy patent, proving that documented customary knowledge is an effective way to preserve cultural heritage.⁹⁸⁵

6.3. Basmati Rice Case:

The Basmati rice lawsuit concerned RiceTec, a U.S.-based business that aimed to patent basmati rice varieties and utilize the term "basmati" for rice sold in the US. A type of rice known for its distinct scent and large grain; basmati rice has long been grown in the Indo-Gangetic Plain. The Indian government said that the term "basmati" was solely linked to rice from

these locations, giving it a geographical indicator (GI), despite the fact that both India and Pakistan assert territorial rights to the variety. RiceTec eventually removed the term "basmati" from their marketing after the case caused a global uproar. The Basmati instance serves as an example of how important GIs are for preserving the commercial and cultural worth of local agricultural products.⁹⁸⁶

6.4. Potato (Lay's) Case:

The Potato (Lay's) case revolved around PepsiCo's efforts to enforce intellectual property rights over the FC5 potato type, which the company utilized solely in its Lay's brand of chips. PepsiCo initiated litigation against several Indian farmers, alleging that they were cultivating FC5 without permission and demanded royalties for this type. However, the case sparked widespread uproar, notably among farmers' rights advocates, who claimed that such acts jeopardized traditional agricultural techniques and their rights. Amid public outrage, PepsiCo withdrew the litigation, demonstrating the delicate interplay between intellectual property claims on plant types and the traditional rights of local farmers.⁹⁸⁷

6.5. Bt Cotton Case:

In the Bt cotton the case in India, Monsanto's patented genetically modified Bt cotton created difficult concerns concerning traditional knowledge (TK) and farmer rights. Monsanto's Bt cotton, which was genetically modified to resist bollworm, was brought into India via licensing deals for Indian seed businesses that included a royalty system. Farmers faced exorbitant seed costs, resulting in financial dependency and economic distress.

Traditional agricultural traditions in India, such as the freedom to conserve and reuse seeds, clashed with Monsanto's patent enforcement, which limited farmers' autonomy over seeds—a

⁹⁸⁴ Indulia, B. (2020, July 14). *Intellectual Property Rights and Protection of Traditional Knowledge: A General Indian Perspective* | SCC Times. SCC Times. <https://www.sconline.com/blog/post/2020/06/22/intellectual-property-rights-and-protection-of-traditional-knowledge-a-general-indian-perspective/>
⁹⁸⁵ Admin, & Admin. (2023, April 17). Patenting of Traditional Knowledge in Light of the Turmeric Case | IIPRD. IIPRD | <https://www.iiprd.com/patenting-of-traditional-knowledge-in-light-of-the-turmeric-case/>

⁹⁸⁶ PROTECTION OF TRADITIONAL KNOWLEDGE UNDER INTELLECTUAL PROPERTY RIGHTS REGIME. (5 B.C.E.). In <https://cnlu.ac.in/storage/2022/08/10-Riya.pdf>.

⁹⁸⁷ Lopes, F., Lopes, F., & Indiaspend. (2022, September 15). *Why There Is A Fight Over The Potatoes Used To Make Lay's Chips*. Indiaspend. <https://www.indiaspend.com/agriculture/the-lays-chips-potato-variety-case-indian-farmers-rights-and-intellectual-property-laws-834952>

right inherent in India's traditional farming practices. In response, Indian seed businesses and farmers argued that such plants and seeds should be declared unpatentable under Section 3(j) of India's Patent Act, which forbids patents on plants, animals, and biological processes. Courts initially supported this, highlighting that Monsanto's patent conflicted with farmers' customary rights. However, the Supreme Court later found in favor of Monsanto's patent rights, combining innovation with limited protection for traditional methods under the Plant Varieties and Farmers' Rights Act.⁹⁸⁸

7. Recommendation:

To protect traditional knowledge (TK) within the intellectual property rights (IPR) framework, it is crucial to develop sui generis systems tailored to the unique aspects of TK, ensuring that legal mechanisms reflect its collective ownership and cultural significance. Equitable benefit-sharing mechanisms should be implemented to provide fair compensation to TK holders. Enhancing the documentation and digitization of TK will help in providing legal evidence and preventing misappropriation. Promoting international cooperation is vital to create a unified approach to prevent biopiracy. Raising awareness among both indigenous communities and external entities about TK rights and ethical use is essential. Additionally, adopting culturally sensitive approaches that respect the collective nature of TK will help safeguard it while enabling its responsible and equitable use. To secure the legal use of hereditary resources and conventional proficiency, national and international regulatory frameworks should be established and implemented in the intellectual property system. To safeguard traditional information, it's crucial to improve political and legal flexibility in current international frameworks. Indigenous and local communities should be involved in discussions and agreements on genetic resources and cultural information. These

measures together can ensure the protection and sustainability of TK, benefiting both indigenous communities and broader society.

8. Conclusion:

In conclusion, the preservation and commercialization of Traditional Knowledge (TK) under Intellectual Property Rights (IPR) frameworks is crucial for conserving indigenous history, assuring equitable recompense, and promoting long-term economic prospects for traditional communities. Modernization and misappropriation pose dangers to traditional knowledge (TK), which encompasses agriculture, medicine, and cultural activities. While IPR measures such as patents and geographical marks provide some protection, they frequently conflict with the community nature of TK. India has pioneered policies such as the Traditional Knowledge Digital Library (TKDL) and the Biological Diversity Act, which both aim to safeguard TK while allowing for benefit sharing. Cases such as the Kani tribe's agreement to earn royalties from the 'Jeevani' product demonstrate how equitable sharing approaches can help communities. However, protecting traditional knowledge necessitates long-term commercialization approaches that avoid overexploitation and preserve cultural integrity. A personalized IPR approach, maybe via sui generis systems, is required to connect TK protection with indigenous values and community needs. A balanced framework not only recognizes traditional knowledge bearers, but also encourages them to preserve cultural and ecological variety for future generations.

⁹⁸⁸ Ramanna, A. & University of Pune. (n.d.). Bt Cotton and India's Policy on IPRs. *Asian Biotechnology and Development Review*, 44–46.
https://ris.org.in/sites/default/files/article3_v7n2.pdf