Analyzing Legal Frameworks in Protecting Traditional Knowledge and Its Implication for Indigenous Communities

Ritu Singh Sisodia[1,*] and Yashasvita Chauhan[2,#]

[1]Dr Bhimrao Ambedkar University, Agra,Uttar Pradesh 282003, India; [*]All India Bar Council of India.
[2]Dept. of Biotechnology, Agra College, Agra, Uttar Pradesh 282002, India.

E-mail: [*]rajritu1708@gmail.com; [#]yashasvita.tulip@gmail.com

(Received: Feb 22, 2026; Revised: May 05, 2026; Accepted: May 23, 2026; Published: Jun 30, 2026)

Abstract This study examines the legal framework for protecting traditional knowledge (TK) and its implications for indigenous communities, highlighting challenges and potential solutions. With approximately 80% of developing nations' populations relying on traditional medicine for primary healthcare, Traditional Knowledge's significance cannot be overstated. However, instances of bio-piracy and unauthorized commercialization underscore the need for robust protection mechanisms. The present findings reveal the problems as Lack of Legal Recognition: Traditional Knowledge is not recognized in the present IPR framework, designed for individual and time-bound innovation, Bio-Piracy: Unauthorized use of genetic resources and Traditional Knowledge by external parties for commercial gain without fair compensation and Cultural Sensitivity: Creating databases and registers to document Traditional Knowledge can help prevent misappropriation. The need of the hour is Sui Generis Systems: Tailored legal systems to recognize Traditional Knowledge's communal and evolving nature, Community Involvement: Ensuring indigenous communities participate in decision-making processes and International Cooperation: Preventing misappropriation and ensuring equitable benefit-sharing. This study contributes on the way of protecting Traditional Knowledge, emphasizing the need for a balanced and inclusive approach that respects indigenous communities' rights and cultural heritage.

Keywords: Traditional Knowledge, Legal Framework, Biopiracy.

I Introduction

India is home to over 100 million indigenous people, representing approximately 8.6% of the country's total population who possess a rich cultural heritage and traditional knowledge. Identity, culture and livelihoods of these indigenous communities are mainly based on traditional knowledge and thus its protection is crucial for their survival. However, increasing demand for Traditional Knowledge by external agencies like various companies, corporations, researchers has led to its over exploitation and mis-appropriation. So, major challenge today is to protect Traditional Knowledge from mis-appropriation and implement benefit sharing for the indigenous community. The present study analyses the existing legal frameworks for protection and how it affects the lives of indigenous people.

II Methodology and Review

A qualitative approach was employed in present study analysing existing laws and policies related to Traditional Knowledge protection in India. There are various Indian legal frameworks which are associated with protection of Traditional Knowledge as follows:

II.a Indian Legal Frameworks

The Biological Diversity Act (BDA), 2002 [1] and the Protection of Plant Varieties and Farmers' Rights Act (PPVFR), 2001 [2], The Forest Right Act, 2006 [3] are key laws aimed at protecting Traditional Knowledge in India. However, their implementation has been limited, and indigenous communities continue to face challenges in accessing their rights.

II.b Traditional Knowledge Digital Library (TKDL)

The Traditional Knowledge Digital Library (TKDL) is a digital repository of Traditional Knowledge, established by the Indian government to prevent biopiracy and promote the use of Traditional Knowledge for the benefit of indigenous communities [4].

II.c National Commission for Scheduled Tribes (NCST)

The National Commission for Scheduled Tribes (NCST) is a constitutional body that advises the government on issues related to indigenous communities, including Traditional Knowledge protection [5].

In spite of above legal frameworks various instances of exploitation and biopiracy has been witnessed. Some of the cases are the following:

- **The Turmeric Patent Case (1995)**: The University of Mississippi Medical Center was granted a patent for the use of turmeric (Curcuma longa) as a wound healer. The Indian government challenged the patent, arguing that turmeric had been used for centuries in traditional Indian medicine. The US Patent and Trademark Office eventually revoked the patent, recognizing the prior art and traditional knowledge of Indian communities.
- **The Neem Patent Case (1994)**: As mentioned earlier, W.R. Grace, a US-based company, patented the insecticidal properties of the Neem tree (Azadirachta indica). The Indian government and indigenous communities challenged the patent, arguing that it was a case of biopiracy. The European Patent Office eventually revoked the patent, recognizing the prior art and traditional knowledge of Indian communities.
- **The Basmati Rice Case (1997)**: A US-based company, RiceTec, patented the Basmati rice variety, which is a traditional crop of Indian and Pakistani farmers. The Indian government and farmers' organizations challenged the patent, arguing that it was a case of biopiracy. The US Patent and Trademark Office eventually rejected the patent.
- **The Kani Tribe Case (1995)**: The Kani tribe, an indigenous community in India, had traditionally used the Trichopus zeylanicus plant for its medicinal properties. An Indian company, Tropical Botanicals, patented the plant's properties without consulting the Kani tribe. The Kani tribe eventually received a share of the royalties, but the case highlights the need for prior informed consent and benefit-sharing.
- **The Haldi and Margdarshak Case (2011)**: The Indian company, Dabur, was accused of patenting the traditional knowledge of the Haldi (turmeric) and Margdarshak (a traditional Indian sweet) without consulting the indigenous communities. The case is still pending in the Indian courts.
- **The Jamun Patent Case (2015)**: A US-based company, NutraGenesis, patented the anti-diabetic properties of the Jamun (Syzygium cumini) fruit. The Indian government challenged the patent, arguing that Jamun had been used for centuries in traditional Indian medicine. The US Patent and Trademark Office eventually rejected the patent.
- **The Ashwagandha Patent Case (2019)**: A US-based company, Nulife Health, patented the anti-stress properties of Ashwagandha (Withania somnifera). The Indian government challenged

the patent, arguing that Ashwagandha had been used for centuries in traditional Indian medicine. The US Patent and Trademark Office eventually rejected the patent.

The above cases highlight the importance of recognizing, documenting and protecting traditional knowledge, and the need for prior informed consent from indigenous communities. These cases emphasize the importance of protecting genetic resources, and the need for recognizing the rights of farmers and indigenous communities. The Kani Tribe case demonstrates the importance of recognizing and respecting indigenous cultural and intellectual property rights, and the need for fair and equitable benefit-sharing. The Haldi and Margdarshak case highlights the need for robust legal frameworks and policies to protect traditional knowledge and prevent biopiracy.

III Major Findings

Inadequate legal protection, lack of participation of locals and culture incompatibility result in erosion of Traditional Knowledge threatens a very existence of indigenous culture and identities. The exploitation of Traditional Knowledge deprives indigenous communities of economic benefits promoting poverty and inequality. The lack of Traditional Knowledge protection can lead to human right abuses including right to self-determination and cultural preservation.

The loss of traditional knowledge can lead to the loss of traditional crops and food system threatening the food security of indigenous communities. The lack of Traditional Knowledge protection can also lead to the environmental degradation and as a result indigenous communities are not able to manage and conserve their natural resources effectively. It can also lead to inter-generation of indigenous communities are not future generations. The loss of Traditional Knowledge lead to the loss of traditional medicine and health practices, threatening the health and well being of indigenous communities. The indigenous communities often face barriers in accessing justice, making it difficult for them to seek redress for Traditional Knowledge related grievances.

IV Recommendations and Conclusion

IV.a Recommendations

1. **Recognition of Indigenous Rights**: The Indian government must recognize and respect indigenous rights to Traditional Knowledge.
2. **Community-led Protection**: Indigenous communities should be empowered to develop and implement their own Traditional Knowledge protection systems.
3. **Strengthening of Existing Laws**: The BDA and PPVFR should be amended to provide stronger protection for Traditional Knowledge and ensure indigenous participation in decision-making processes.
4. **Awareness and Capacity Building**: Awareness and capacity building programs should be implemented to support indigenous communities in protecting their Traditional Knowledge.
5. **Access to Justice**: Mechanisms should be established to ensure indigenous communities have access to justice for Traditional Knowledge-related grievances.

The protection of traditional knowledge is a paramount concern in India, requiring a nuanced and inclusive approach. The existing legal frameworks are inadequate, and a more strong and culturally sensitive framework is needed to address the concerns of indigenous communities.

References

[1] Government of India. The biological diversity act, 2002, 2002. Act No. 18 of 2003.

[2] Government of India. The protection of plant varieties and farmers' rights act, 2001, 2001. Act No. 53 of 2001.

[3] Government of India. The forest rights act, 2006, 2006. Act No. 2 of 2007, amended 2019.

[4] Council of Scientific and Industrial Research (CSIR). Traditional knowledge digital library. www.tkdl.res.in. Accessed: 2026.

[5] National Commission for Scheduled Tribes. About ncst, n.d. Constitutional body.

Conflict of interest: The Authors have no conflicts of interest to declare that they are relevant to the content of this article.
About The License: © 2026 The Author(s). This work is licensed under a Creative Commons NonCommercial 4.0 International License (CC BY-NC 4.0) which permits unrestricted use, provided the original author and source are credited.