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Biopiracy: How Intellectual Property Falls Short in Protecting Traditional Medicinal Knowledge

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ABSTRACT

This article explores the pervasive issue of biopiracy and the inadequacies of existing intellectual property laws in protecting traditional medicinal knowledge. By analysing key cases such as the Turmeric, Neem, and Basmati Rice patent disputes, it highlights how IP frameworks, focused on individual ownership and novelty, fail to recognize the communal and inherited nature of indigenous knowledge. Global agreements, including the TRIPS Agreement and the Convention on Biological Diversity (CBD), have made strides, yet critical gaps persist, allowing corporations to patent and profit from resources that indigenous communities have long preserved. The article emphasizes the need for legal reforms that incorporate prior informed consent and equitable benefit-sharing to prevent the unchecked exploitation of traditional knowledge. It advocates for sui generis protections tailored frameworks that align with the values and structures of indigenous communities aiming to honour cultural heritage while addressing commercial interests. This work calls for a more inclusive IP system that not only safeguards traditional knowledge but ensures rightful recognition and benefits to indigenous communities, preserving their contributions to global health and biodiversity.

Keywords: *Biopiracy, Traditional Medicinal Knowledge, Intellectual Property, Indigenous Communities, Sui Generis Protections.*

I. INTRODUCTION

The fable of The Scorpion and the Frog powerfully reflects the biopiracy challenges faced by indigenous communities. For generations, these communities have safeguarded unique medicinal knowledge and remedies with significant potential for modern medicine. Like the trusting frog, they sometimes share this knowledge with pharmaceutical companies, hoping for ethical collaboration. However, as the fable illustrates, many corporations prioritize profit over principles. They often patent this knowledge, claiming exclusive rights over remedies that indigenous people have used freely for generations. Consequently, these communities are left

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“stung”—deprived of their cultural legacy and medicinal autonomy while receiving no benefits or recognition.

Traditional knowledge, cultivated over generations through collective intellectual effort and human insight, encompasses a broad spectrum of fields, including science, art, literature, medicine, agriculture, and environmental management. Firmly grounded in cultural traditions and communal practices, this knowledge embodies a society’s shared wisdom and is intricately linked to nature and local resources. Rooted in centuries of cultural heritage, traditional medicinal knowledge is an invaluable resource for local communities, embodying remedies and practices that have sustained health and well-being for generations. However, intellectual property laws, which are designed primarily to protect individual innovation, often fall short in safeguarding these collective, community-based resources.

Despite the framework established by the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), which sets minimum IP standards globally, there remain significant gaps in protecting traditional knowledge. This allows pharmaceutical companies and other entities to patent remedies derived from indigenous knowledge without compensating or recognizing the original holders of that knowledge. Consequently, indigenous communities are frequently deprived of both economic benefits and access to the very resources they helped cultivate.

II. HISTORICAL BACKGROUND

The origins of biopiracy date back to colonial times when European explorers and colonizers systematically extracted resources, plants, and indigenous knowledge from colonized lands, often without consent or compensation. Plants with medicinal properties, such as cinchona used to treat malaria and cacao, were taken to Europe and cultivated, becoming economically valuable commodities without any acknowledgment of the indigenous communities who discovered their properties.

In the 20th century, as the pharmaceutical and agricultural industries grew, the commercialization of natural resources and traditional medicinal knowledge intensified. The patenting of genetic material, such as neem and turmeric, by corporations in developed countries led to an outcry from India and other nations, which viewed these practices as a form of biopiracy. Indigenous communities had long used these resources for medicinal and agricultural purposes, but patents allowed foreign entities to monopolize their use, restricting access and profiting from knowledge developed over generations.

Efforts to address biopiracy emerged in international agreements like the Convention on

Biological Diversity (CBD) of 1992, which recognized the rights of countries over their biological resources and called for equitable benefit-sharing when traditional knowledge is utilized. However, the TRIPS Agreement under the World Trade Organization does not explicitly protect traditional knowledge, creating a gap that allows corporations to claim IP rights over resources historically managed by indigenous communities. This lack of strong IP protections has left traditional knowledge vulnerable, underscoring the need for comprehensive legal reforms to prevent biopiracy and ensure fair compensation for indigenous contributions.

III. LIMITATIONS OF IP IN PROTECTING TRADITIONAL MEDICINAL KNOWLEDGE

Most IP frameworks, especially patent law, require that knowledge be novel and non-obvious to qualify for protection. Since traditional knowledge is centuries old and widely shared within communities, it often fails to meet these criteria. For example, even if a community has used a medicinal plant for generations, it cannot be patented by that community, as the knowledge is not "new".

IP laws are largely based on the concept of individual or corporate ownership, which conflicts with the communal nature of traditional knowledge. Indigenous communities traditionally view their knowledge as a shared cultural asset rather than individual property. As a result, they often lack a single legal entity that can be recognized as an "owner" under IP law, leaving the knowledge vulnerable to appropriation.

Patent applications require detailed disclosure of the invention or process to be protected. However, disclosing traditional knowledge often risks exposing sensitive cultural information, which may then be freely used or appropriated by others. This disclosure requirement conflicts with the values of many indigenous communities, who wish to keep their traditional knowledge private or use it within the community.

Traditional knowledge often exists outside the limited time frames imposed by IP laws, such as patents that last 20 years. Traditional knowledge, in contrast, is intended to be preserved indefinitely within communities, complicating protection within an IP framework that mandates expiration dates on protections.

The TRIPS Agreement, while establishing minimum standards for IP protection globally, does not directly address traditional knowledge or provide specific protections for communal knowledge systems. Despite various national and international discussions, including within the World Intellectual Property Organization (WIPO), there is no binding global framework that adequately protects traditional knowledge, leaving it vulnerable to biopiracy and exploitation.

IV. ROLE OF INTERNATIONAL TREATIES AND AGREEMENTS

International treaties and agreements have increasingly recognized the need to protect traditional knowledge from exploitation and unauthorized use. However, the effectiveness of these treaties in safeguarding traditional knowledge varies, and significant gaps remain.

1. Convention on Biological Diversity (CBD) and the Nagoya Protocol

The CBD, adopted in 1992, was a landmark agreement that addressed the rights of countries over their biological resources and emphasized the need to protect traditional knowledge associated with biodiversity. Article 8(j) of the CBD specifically obligates signatory countries to "respect, preserve, and maintain" traditional knowledge relevant to conservation and sustainable use of biodiversity, promoting benefit-sharing with indigenous communities. However, while the CBD establishes foundational principles, it does not directly enforce specific protections, leaving the implementation largely to national governments.

The Nagoya Protocol (2010), a supplementary agreement to the CBD, provides a more structured approach to access and benefit-sharing of genetic resources, including traditional knowledge. It requires parties to obtain prior informed consent from indigenous communities before using their knowledge and mandates fair benefit-sharing for any commercial or research use of these resources. The Nagoya Protocol has advanced the CBD's principles by creating a framework to prevent biopiracy; yet, challenges remain with implementation, especially in ensuring compliance and equitable benefit-sharing.

2. World Intellectual Property Organization (WIPO) Initiatives

WIPO has developed several initiatives focused on the protection of traditional knowledge. Since 2000, WIPO's Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge, and Folklore (IGC) has been working to establish an international legal framework specifically designed to protect traditional knowledge. These negotiations aim to create a sui generis system for traditional knowledge that respects its communal and intergenerational nature, moving away from traditional IP systems based on individual ownership and novelty requirements.

WIPO has also developed resources such as the Traditional Knowledge Documentation Toolkit, which provides guidelines to help communities document their knowledge in a way that minimizes risks of misuse. However, despite over two decades of negotiations, a legally binding international agreement on traditional knowledge protection has yet to be finalized, with many countries differing on issues of IP scope, benefit-sharing, and enforcement.

3. **Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)**

The TRIPS Agreement, adopted in 1994 under the WTO, established minimum IP standards for all WTO member countries. However, it does not directly address traditional knowledge, instead focusing on patents, copyrights, and trademarks as they apply to conventional, formalized innovation. Article 27.3(b) of TRIPS allows countries to exclude certain biological processes from patentability and encourages the protection of plant varieties either through patents or other systems, but this is insufficient for traditional knowledge protection.

Efforts have been made to introduce amendments or flexibilities within TRIPS to allow member countries to adopt policies that protect traditional knowledge, including proposals for a disclosure requirement that would mandate information on the origin of genetic resources in patent applications. Nonetheless, the lack of binding commitments to protect traditional knowledge under TRIPS has led to criticism that the agreement prioritizes corporate interests over community rights and leaves traditional knowledge vulnerable to biopiracy.

4. **United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP)**

The UNDRIP, adopted in 2007, recognizes the rights of indigenous peoples to maintain, control, protect, and develop their traditional knowledge and cultural heritage (Article 31). Although UNDRIP is not legally binding, it has been influential in guiding international norms and encouraging states to create domestic laws that protect traditional knowledge. UNDRIP's emphasis on indigenous sovereignty and self-determination over their knowledge and resources provides a human rights-based approach to traditional knowledge protection.

V. BALANCING COMMERCIAL INTERESTS AND CULTURAL HERITAGE

Balancing commercial interests and cultural heritage is a complex challenge, particularly in the realm of traditional knowledge held by indigenous communities. This knowledge, integral to their identity and cultural practices, is increasingly sought after by corporations for use in pharmaceuticals, cosmetics, and food industries. To protect this cultural heritage, principles of prior informed consent and fair benefit-sharing must be upheld, ensuring that communities are informed and compensated for the use of their knowledge. Sui generis legal systems offer tailored protections, allowing communities to retain collective rights, while corporate responsibility and ethical practices promote transparency and collaboration. Increasing awareness of the significance of traditional knowledge can further bolster support for protective measures, fostering partnerships that enable innovation and economic growth while preserving

invaluable cultural legacies.

VI. PIONEERING LEGAL BATTLES

Traditional medicinal knowledge, a rich legacy passed down through generations, is under threat from appropriation and commercialization by profit-driven entities. The landmark legal battles expose the inadequacies of current intellectual property laws in safeguarding this invaluable heritage. It is important to highlight the urgent need for a robust legal framework that recognizes and fiercely protects the rights of indigenous communities, ensuring their contributions are honoured against the tide of biopiracy threatening to erase their legacy.

One landmark case exemplifying this struggle is the *Turmeric Patent Case* of 1995. The US patent on turmeric's healing properties long utilized in India was revoked following fierce opposition from the Indian Council of Scientific and Industrial Research (CSIR). This case underscored the urgent need for IP laws to recognize prior knowledge embedded in indigenous practices, highlighting significant inadequacies in existing legal frameworks.

Similarly, the *Neem Patent Case* of 1994 revealed the perils of corporate interests overriding traditional rights. A patent for a pesticide derived from neem, granted to the American company W.R. Grace, was challenged by the Indian government, leading to its revocation. This battle showcased how traditional knowledge could be undermined and emphasized the need for stronger legal protections against biopiracy.

The *Basmati Rice Patent Case* of 1997 further illustrated the challenges in protecting traditional agricultural knowledge. The attempt to patent Basmati rice in the US resulted in a legal battle that ultimately denied the patent, highlighting the critical role of geographical indications (GIs) in safeguarding traditional products and reaffirming the importance of honouring indigenous heritage amid commercialization.

The *Kava Kava Patent Case* of 2001 also exemplified the shortcomings of current IP frameworks. A patent for a kava-based beverage faced revocation after Pacific Islander communities asserted their traditional use of kava, illuminating gaps in IP laws that fail to protect indigenous rights and underscoring the need for meaningful reforms.

Despite these legal battles, significant shortcomings remain within intellectual property laws. Traditional knowledge is often treated as public domain, allowing unauthorized exploitation without adequate benefit-sharing. Additionally, the lack of prior informed consent from indigenous communities frequently leads to violations of their rights, further emphasizing the need for reform.

VII. CONCLUSION

The need to protect traditional knowledge from biopiracy is increasingly recognized as vital for safeguarding cultural heritage and ensuring the equitable sharing of benefits derived from indigenous resources. While international treaties and domestic laws have begun to address the challenges posed by biopiracy, significant gaps remain. Comprehensive legal reforms and robust enforcement mechanisms are necessary to create an effective framework that honours the rights of indigenous communities while balancing commercial interests.

As we move towards a more inclusive and equitable approach to intellectual property rights, it is crucial to recognize the immense value of traditional knowledge and the contributions of indigenous communities to global health and biodiversity. Through collaborative efforts that respect and protect traditional knowledge, we can pave the way for a future where cultural heritage is celebrated and preserved, ensuring that the contributions of indigenous communities are recognized and valued.

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