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Book Review: The Interface of Intellectual Property Law with Other Legal Disciplines

EDITORIAL NOTE

It is with great pride that I announce the publication of the 15th Volume of the Indian Journal of Intellectual Property Law (IJIPL), India's oldest journal dedicated to the study of intellectual property law.

This year marks a special milestone for the Journal, as it became the very first student-run journal from India to be indexed in Elsevier's Scopus. This recognition is a tribute to the scholarship fostered over the past fourteen volumes, and to the dedication of those who built the foundations on which this volume proudly stands. In particular, I record my gratitude to Ms Trisha Chaudhary (Managing Editor, Volume 14), Mr Aniket Chauhaan (Managing Editor, Volume 13), and Professor Anindya Sircar, the Editor-in-Chief and a stalwart in IP law, without whose efforts this distinction would have been inconceivable.

The 15th Volume of the IJIPL presents to its readers seven chapters, addressing some of the most current issues in IP law. Among others, the present volume addresses the debate on copyright liability in respect of works generated by artificial intelligence (AI) and critically examines different aspects of the frameworks governing the protection of designs, traditional knowledge, and geographical indications. The jurisdictional expanse of the analyses proffered is similarly wide, covering the European Union, Taiwan, and India. I am proud to share that each chapter stands as a testament not only to the expertise of its authors but also to the spirit of this journal and of NALSAR, which is

rooted in the novelty of thought, the intersectionality of discourse, and the courage to question the established.

The opening chapter of the 15th Volume, *Differentiated Protection And Exceptions And Limitations/Fair Use Of Traditional Cultural Expressions* by Prof. Chih-Chieh Yang, presents a thought-provoking argument on the unsuitability of copyright-inspired frameworks for the protection of traditional cultural expressions (TCEs). Prof. Yang undertakes a meticulous study of the *WIPO Draft Articles* and their "tiered" protection approach for TCEs, which are categorised basis the extent of their diffusion in the public. Importantly, Prof. Yang notes that while economic rights accorded to TCEs vary with the "tier" to which they belong, their corresponding moral rights remain uniform across the board. The chapter then shifts its focus to a study of the limitations or exceptions to the rights envisaged by the WIPO Draft Articles. Prof. Yang argues that these exceptions, which are heavily influenced by the "fair-use" framework designed for copyright protection, suffer from overbreadth and risk undermining effective protection of TCEs. The chapter uses Taiwan's recent case law concerning the inadequate protection granted to the *Kiwit* indigenous people's TCEs under Taiwan's pre-*WIPO* statute as a stark reminder of the consequences arising out of the use copyright-inspired frameworks for TCEs. Prof. Yang concludes the chapter by suggesting the adoption of independent frameworks for the protection of TCEs that better accommodate the sensitivities surrounding them.

The second chapter, *Reforming EU Design Law: A Critical Analysis of Regulation (EU) 2024/2822* by Dr Vishv Priya Kohli, provides a timely and critical evaluation of the European Union's recently amended design protection framework. Dr Kohli traces the reform's origins in the limitations of the 2002 framework and sets out its principal innovations: an expanded definition of design covering digital and animated forms (including 3D printing files), the adoption of a registration symbol and full centralisation of procedures at the EUIPO, enhanced border enforcement, and the codification of a permanent repair clause. The chapter offers a detailed assessment of the repair clause, explaining its "must-match" rationale, consumer-information requirement, and aims of promoting competition and sustainability, while drawing attention to its practical ambiguities and compliance burdens. It also engages with the larger debate between expansive protection and freedom of expression, and the aspiration of technological neutrality and the challenges posed by AI, VR/AR, and decentralized distribution systems. Dr Kohli concludes by stressing that the ultimate effectiveness of Regulation 2024/2822 will depend on clear judicial interpretation and the capacity of stakeholders to adapt.

Up next, *Moral Rights in the Age of Generative AI: Reconsidering the Author in Indian Copyright Law* by Prof. M P Ram Mohan and Ms Sahana Simha examines the strain that generative technologies place on the author-centric model of copyright protection. The authors show how the traditional conception of authorship in Indian copyright law and originality falls short when applied to machine-generated outputs. The

chapter maps the limitations of the existing copyright regime and identifies key points of friction. Among others, such limitations include the uncertain threshold of originality and the disruptive effects of algorithmic creativity. Further, it further brings in comparative perspectives from Europe and the United States to illustrate how different jurisdictions are grappling with similar dilemmas. Special attention is given to the question of moral rights, where the authors argue for an approach that preserves the humanist foundations of copyright while adapting to technological change. The authors conclude by emphasising that Indian copyright law must confront the realities of generative AI by clarifying the position of human creators, while ensuring that moral rights remain resilient as a safeguard for creativity and integrity in this age.

The fourth chapter of the volume *Demanding Geographical Indication for Kashmiri Kala Zeera: Analyzing Producers' Perspectives in Kashmir, India* by Dr Anna Bashir, provides her readers with an empirical examination of the socio-economic and institutional factors underpinning producers' demand for GI protection for *Kashmiri Kala Zeera*. In doing so, Dr Bashir employs frameworks linking producer awareness, knowledge, capability, and social cohesion to collective demand formation. Using surveys and focus group discussions across Jammu and Kashmir, the chapter finds that the producers view the *Kashmiri Kala Zeera*'s altitude-specific aroma, essential oil composition, and organic purity as constituting its distinctiveness warranting GI recognition. The chapter categorises motivations into uniqueness, economic, marketing, cultural, and threat-related factors, each

reflecting the multifaceted rationale behind the pursuit of protection. The chapter concludes that GI protection for *Kashmiri Kala Zeera* functions as both a means of economic development and a mechanism for preserving cultural identity.

The subsequent chapter, *Consent Mechanism in ABS Governance: Challenges in Ensuring Fairness and Equity* by Dr Narendran Thiruthy and Achyuth B Nandan, critically analyses the role of Prior Informed Consent (PIC) in advancing fairness and equity within the Access and Benefit-Sharing (ABS) regime under the Convention on Biological Diversity (CBD) and the Nagoya Protocol (NP). The authors trace the evolution of PIC as a legal safeguard against biopiracy and situate it within the broader regime of biodiversity governance. The authors examine the WIPO GRTK Treaty, the CBD, and the NP, to highlight the underlying conflict between state claims to sovereignty over genetic resources and the self-determination rights of Indigenous Peoples. Using India as a case study, the authors assess how the Biological Diversity (Amendment) Act, 2023, and the Biological Diversity Rules, 2024 seek to embed prior informed consent within Biodiversity Management Committees but offer minimal progress toward genuine community representation and fair benefit-sharing. The chapter concludes that while India's ABS framework is among the most developed globally, fairness and equity will depend on replacing consultation with legally enforceable, participatory consent.

The sixth chapter, *Eco-Custodians: The Past, Present, and Future Contributions of Geographical Indications (GI) and Traditional Knowledge (TK)*

to Environmental Stewardship by Dr Jayanta Ghosh and Arka Kumar Nag, discusses how geographical indication and traditional knowledge function as tools for environmental sustainability. The chapter traces their evolution from practices rooted in local ecosystems to contemporary frameworks that link product authenticity with ecological preservation. The authors highlight the shortcomings that hinder these regimes from realising their full ecological potential, including over-commercialisation and inequitable benefit-sharing. It highlights the transformative potential of the 2024 WIPO Treaty on Intellectual Property, Genetic Resources, and Traditional Knowledge, arguing that it marks a shift toward the recognition Indigenous Peoples as rights-holders in environmental governance. The authors conclude by calling for a policy framework that embeds environmental indicators within GI and TK protection, recognises community-led conservation as central to their enforcement, and aligns these regimes with the WIPO Treaty to advance climate-resilient development.

In the concluding chapter of the Volume, Aniket Chauhaan and Sreekar Aechuri review Christophe Geiger's *The Interface of Intellectual Property Law with Other Legal Disciplines*. The book develops a cohesive taxonomy of intellectual property's interactions across disciplines, while also offering critical reflections on its treatment of emerging areas. The authors highlight Rochelle Dreyfuss' taxonomy as foundational to the volume's structure, mapping intellectual property's influence on globalisation, forum shopping, and regulatory arbitrage. The reviewers underscore the significance of contributions by Peter Yu, Fischman-Afori, Jessica Lai, and Joanna Wisniowska, each of

whom situates intellectual property within contexts ranging from human rights to biotechnology ethics.

While this Volume speaks through its scholarship, it also reflects the quiet and sustained efforts of the editorial board, who have worked tirelessly for almost a year to bring it to fruition. I record my gratitude to our esteemed Editor-in-Chief, Prof. Anindya Sircar, and the faculty editors—Dr Rohan Cherian Thomas and Prof. Sourabh Bharti—for their consistent mentorship and support. I would also take this moment to appreciate the efforts of my friends and fellow student editors—Aadvika, Akarshi, Lakshya, Saranya, Ravi, and Shravya—whose diligence and good humour made the process as rewarding as it was memorable.

In a world increasingly moving towards the monetisation of knowledge, the enduring presence of a student-led, open access journal like the IJIPL is a rarity worth cherishing, and its success, rarer still. The challenges this Journal faces are many: an age that tests institutions founded on the pursuit of knowledge with the lure of its commodification, and an environment that blunts the instinct to ask why. And yet, even amid all of this, the IJIPL endures. At the risk of repetition, it bears restating that the IJIPL's strength has always lain in its audacity of critical reflection, within and outside scholarship. At this point, I would be remiss not to mention that this Volume is best dedicated to the late Mr Sahastranshu Pandey (2001-2025), a talented scholar that the world lost too soon. This dedication is meant to share with the readers the legacy of a man who embodied this ideal and

inspire them to be relentless in their pursuit of challenging the ideas that be. Finally, to those who have taken the time to read and reflect with us, I offer my deepest thanks. Your willingness to pause and think is itself a quiet act of rebellion. I hope it proves, in some small way, worth your time.

~ Pranav Bajpai
Managing Editor
2024-25

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DIFFERENTIATED PROTECTION AND EXCEPTIONS AND LIMITATIONS/FAIR USE OF TRADITIONAL CULTURAL EXPRESSIONS

Chih-Chieh Yang[*]

Abstract

This article introduces key provisions of the WIPO Draft Articles on Traditional Cultural Expressions ("TCEs"), including the tiered protection approach, the varying levels of protection for economic and moral rights, and the exceptions and limitations. By examining different versions of the Draft Articles, this study demonstrates that while economic rights receive different degrees of protection under the tiered protection model, moral rights remain consistent across all categories. Furthermore, this article argues that applying existing copyright exceptions and limitations to TCEs is not an appropriate design. Taiwan is one of the few countries that enacted a dedicated law to explicitly protect TCEs at an early stage. However, because this legislation was introduced relatively early, its design contains several shortcomings. The first infringement case in 2018, followed by the Taiwan High Court's ruling in 2024, highlights how the Act's provisions on moral rights and fair use were overly modeled after copyright law, making them inappropriate regulatory approaches. While the WIPO TCEs Draft still contains multiple alternative proposals, and the final approach remains uncertain, comparing these

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models with Taiwan's case law allows for a critical evaluation of the most suitable regulatory framework for TCE protection.

Keywords: *Traditional Cultural Expressions (TCEs), Tiered Protection Approach, Moral Rights and Economic Rights, Exceptions and Limitations, Taiwan Case.*

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1. INTRODUCTION

No matter what means are used to protect traditional cultural expressions ("TCEs"), once protection is granted, the degree of rights protection must be carefully considered. In other words, to what extent should such protection be afforded? Additionally, it is necessary to discuss whether certain exceptions, limitations, or fair use provisions should exist, as these provisions serve as restrictions on the scope of rights protection.

This article focuses on the scope and degree of protection for TCEs, encompassing both economic and moral rights, as well as the applicable exceptions, limitations, and fair use provisions. Furthermore, this article seeks to examine the design of these exceptions, limitations, and fair use provisions through the lens of a specific case in Taiwan.

The WIPO Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore ("IGC") regularly discusses the protection of TCEs of Indigenous peoples. During its 17th session in 2010, the committee first introduced *The Protection of Traditional Cultural Expressions: Draft Articles* (*hereinafter referred*

to as "WIPO TCEs Draft"),[1] which has since been the subject of ongoing discussions and revisions in subsequent meetings.[2] Sections 2 and 3 of this article will introduce the key provisions of the *WIPO TCEs Draft*, including the Tiered Protection Approach proposed by some countries, as well as the exceptions and limitations/fair use provisions.

Taiwan enacted the *Protection Act for the Traditional Intellectual Creations of Indigenous Peoples* at the end of 2007, establishing a sui generis system for the protection of Indigenous TCEs. The *Taiwan Protection Act* officially came into effect in 2015, allowing for registration applications, and in 2018, the first infringement case occurred. In 2024, the Taiwan High Court issued a ruling on the case. In Section 4, this article analyses the court's discussion on fair use and moral rights in this ruling and compares the relevant provisions in the *WIPO TCEs Draft*. It argues that Taiwan's provisions on moral rights and fair use overly mimic copyright law, making them an inappropriate regulatory approach.

2. SCOPE OF PROTECTION UNDER THE WIPO TCES DRAFT

The latest version of the *WIPO TCEs Draft is the Facilitators' Rev.* (June 7, 2023).[3] In this draft, Article 5 defines the "Scope of Protection" for

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1 World Intellectual Property Organization (WIPO), 'The Protection of Traditional Cultural Expressions: Draft Articles' WIPO/GRTKF/IC/19/4, 17 May 2011.

2 Chidi Oguamanam, 'Understanding African and Like-Minded Countries' Positions at WIPO-IGC' (2020) 60 IDEA 386, 405-411; Michael Blakeney, 'Protecting the Spiritual Beliefs of Indigenous Peoples - Australian Case Studies' (2013) 22(2) Pac Rim L & Pol'y J 391, 417.

3 WIPO, 'The Protection of Traditional Knowledge: Draft Articles (Annex - Facilitators' Review 7 June 2023)' WIPO/GRTKF/IC/49/4, 4 October 2024.

TCEs, while Article 7 addresses "Limitations and Exceptions," which correspond to what is referred to as fair use in the United States.

2.1 TIERED PROTECTION APPROACH

2.1.1 Origins and Objectives

In March 2014, during the 27th session of WIPO's Intergovernmental Committee, some participants proposed the *tiered approach* (or *tiered protection*) and attempted to incorporate it into the *WIPO TCEs Draft*.[4] By the 28th session in July 2014, provisions distinguishing different categories of TCEs had been officially included in the draft.[5]

The *Tiered Protection Approach* represents a departure from the previous practice of treating all forms of traditional knowledge and TCEs as a single category subject to uniform protection. Instead, it classifies them into different types and applies varying degrees and scopes of protection accordingly.[6] The primary rationale behind this approach is that some forms of traditional knowledge and TCEs have already been widely disseminated and used. Retrospectively granting protection to such widely shared and utilised knowledge and expressions would face significant challenges.[7] Furthermore, Ruth L. Okediji explains that the most critical feature of the *Tiered Protection Approach* is its attempt to

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4 WIPO, *Report of the Twenty-Seventh Session of the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore* WIPO/GRTKF/IC/27/10, 2 July 2014.

5 WIPO, *Report of the Twenty-Eighth Session of the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore* WIPO/GRTKF/IC/28/6, 2 June 2014.

6 Chidi Oguamanam, 'Towards a Tiered or Differentiated Approach to Protection of Traditional Knowledge (TK) and Traditional Cultural Expressions (TCEs) in Relation to the Intellectual Property System' (2019) 23 AJIC 1, 7.

7 ibid 7-8.

delineate a domain of publicly owned TCEs. Even within Indigenous communities, there is recognition of a shared public domain. Acknowledging this public domain would create a space where both members of Indigenous communities and non-Indigenous individuals can freely engage with certain TCEs.[8]

2.1.2 Three Main Categories

While the Tiered Protection Approach seeks to classify TCEs, the key question remains: how should they be categorised? In a 2019 report, Chidi Oguamanam noted that when the concept was first introduced in 2014, TCEs were initially divided into five categories: (1) secret, (2) sacred, (3) closely held, (4) narrowly or partially diffused, and (5) widely diffused.[9] However, distinguishing between the third category (*closely held*) and the fourth (*narrowly or partially diffused*) proved difficult in practice. Consequently, after further discussions, these two categories were merged into a single classification: "closely held/narrowly diffused."[10]

This classification largely aligns with the categorisation proposed by Harvard professor Ruth L. Okediji in her 2019 paper. However, Okediji added an additional category of "publicly available" to the four types requiring different levels of protection.[11] In WIPO's actual proposal, these five categories were further consolidated into three main types.

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8 Ruth L Okediji, 'A Tiered Approach to the Rights in Traditional Knowledge' (2019) 58 Washburn LJ 271, 307.

9 Oguamanam (n 6) 9.

10 ibid 10-11.

11 Okediji (n 8) 303-308.

The first category of TCEs includes three characteristics: sacred, secret, and closely held. The first characteristic, "sacred," refers to TCEs used in religious ceremonies, holding sacred significance. These are forms of knowledge or expressions that Indigenous communities consider *per se* sacred.[12] The second characteristic, "secret," is similar to the concept of trade secrets, meaning that such knowledge is held by only a limited number of Indigenous people, remains confidential, and is unknown to outsiders.[13] The so-called "closely held" cultural expressions are those collectively developed and owned by the community, typically possessed by their creators in accordance with Indigenous customs and cultural norms.[14]

The second category of TCEs primarily refers to those that are no longer closely held and have become publicly available. The term "publicly available" indicates that the TCE has entered the realm of publicly accessible information. However, it is important to note that while a TCE may be publicly available or accessible to outsiders, it has not necessarily been widely diffused, nor does it directly belong to the public domain. The two concepts are distinct.[15]

The third category of TCEs includes those that are not only publicly available but also widely known or diffused. "Widely known" or "widely diffused" refers to TCEs that have been recognised outside the Indigenous community and have even been extensively used, including in foreign countries. TCEs that are both publicly available

12 Okediji (n 8) 306.
13 ibid.
14 Okediji (n 8) 306.
15 Oguamanam (n 6) 8.

and widely diffused should be considered as materials in the public domain, meaning they can be freely accessed and used by others.[16]

However, according to Chidi Oguamanam, these five characteristics are not mutually exclusive and may overlap in scope or coexist simultaneously. For example, a TCE may still be closely held while simultaneously being publicly available due to unauthorised dissemination.[17]

2.1.3 Different Levels of Protection

The adoption of this *Tiered Protection Approach* entails granting different levels of legal protection to different types of TCEs. If the rights conferred on TCEs are divided into economic rights and moral rights, the primary distinction under this approach lies in the differences in economic rights protection.

In the draft submitted to WIPO by the Africa Group, which later became Alternative 3 of Article 5 in various versions of the *WIPO TCEs Draft*,[18] the first category of TCEs (*sacred, secret, or closely held by a limited group*) is granted economic rights protection similar to conventional intellectual property rights, with absolute exclusive rights.[19] The wording of the provision not only emphasises the ability to prohibit outsiders from using these expressions but also includes the authority to control their internal development.

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16 Okediji (n 8) 306.
17 ibid 11.
18 WIPO, *Report of the Forty-Sixth Session of the General Assembly* WO/GA/46/6, 20 December 2014.
19 Okediji (n 8) 306.

For the second category of TCEs (*publicly accessible but not widely diffused*), economic rights protection is weakened to a post-use benefit-sharing right.[20] This means that while Indigenous communities may not be able to prevent outsiders from using these expressions, they can still demand a share of the benefits derived from such usage.

For the third category of TCEs (*publicly available and widely diffused*), they are considered close to the public domain.[21] However, in the actual proposal by the Africa Group, they are not entirely equivalent to the public domain. Being "close to the public domain" means that there is no economic rights protection for these expressions. However, moral rights must still be respected.

It is important to note that the primary differences in protection under the *Tiered Protection Approach* lie in economic rights, whereas moral rights do not exhibit significant differences in the Africa Group's proposal. In principle, the protection of moral rights remains largely the same across the three categories. Even for the third category of TCEs, the proposal still requires respect for moral rights, including the right of attribution and respect for cultural norms and practices. All three categories emphasise the need to respect Indigenous cultural norms and practices when using TCEs. However, for the first category, the proposal more explicitly prohibits improper modifications that would diminish the cultural significance of the TCE to Indigenous peoples. This is the only stated difference. That said, since all three categories require respect for Indigenous cultural norms and practices,

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20 ibid 307.

21 Okediji (n 8) 308.

improper modifications would inherently be prohibited. Therefore, it remains unclear what the actual distinction between these provisions is.

2.2 Classification and Levels of Protection in Different Alternatives

The following section examines the levels of protection adopted in various alternatives within the *WIPO TCEs Draft*, based on its specific provisions. In Article 5 of the 2023 version of the *WIPO TCEs Draft*, in addition to the original three alternative proposals, a Facilitators' Alternative was introduced. Since Alternative 1 does not adopt a tiered protection model, the following will provide a brief overview of the remaining three proposals.

2.2.1 Two Levels of Protection (Alternative 2 and the Facilitators' Alternative)

Alternative 2 categorises protected TCEs into two types, granting them different levels of protection. The first category consists of TCEs where access is restricted, including cases where TCEs are secret or sacred. These TCEs receive exclusive rights protection, covering both economic rights and moral rights.

Regarding economic rights, during the 40th session of the IGC in June 2019, the *Facilitators' Rev.* introduced by the WIPO Secretariat,[22] revised the original provision that stated "beneficiaries shall have the exclusive right to authorize the use of their traditional cultural expressions." The revision changed this to "right holders shall have an exclusive and

[22] WIPO, 'The Protection of Traditional Cultural Expressions: Draft Articles (Facilitators' Review)' WIPO/GRTKF/IC/40/19, 19 June 2019.

collective right to maintain, control, use, authorize, or prohibit access to or use of their traditional cultural expressions, as well as to obtain a fair and equitable share of benefits from others' use."[23]

The second category consists of TCEs that are no longer under the exclusive control of beneficiaries but are still distinctively associated with their cultural identity. Indigenous peoples may receive a fair and equitable share of benefits from post-use,[24] along with moral rights protection.

The Facilitators' Alternative, introduced in 2023, largely follows the two-tier approach of Alternative 2. However, the wording for the second category differs slightly. While Alternative 2 defines this category as TCEs that are "no longer under the exclusive control of beneficiaries but are still distinctively associated with their cultural identity," the Facilitators' Alternative describes it as TCEs where "access is unrestricted." The scope of rights protection remains the same in both alternatives, but the Facilitators' Alternative further refines and specifies the division of rights. One key distinction from Alternative 2 is that it explicitly allows Indigenous peoples to request protection for the first two categories of TCEs while also granting them the option to seek protection under existing intellectual property systems.

2.2.2 Three Levels of Protection (Alternative 3)

Alternative 3 provides the most detailed framework for the Tiered Protection Approach and corresponds to the proposal submitted by

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23 ibid Article 5, Alternative 2, 5.1.

24 WIPO (n 22) Article 5, Alternative 2, 5.1(b).

the Africa Group, as discussed in Section 2.1.3. It adopts a three-tier classification: 1. Sacred, secret, or closely held TCEs; 2. Publicly available TCEs that have not yet reached the level of being widely known; 3. Publicly available and widely known TCEs. The specific protection measures for each category have already been introduced in Section 2.1.3, and thus will not be repeated here.

2.2.3 Protection of Moral Rights

It is important to note that the tiered protection approach primarily differentiates economic rights, whereas the proposals from the Africa Group do not indicate significant differences in moral rights protection.

In Alternative 2 and the Facilitators' Alternative of Article 5, moral rights protection for both the first and second categories of TCEs includes the right of attribution and the right to have the TCE used in a manner that respects its integrity in accordance with its traditional cultural context.[25]

In Alternative 3, all three categories of TCEs are granted three common moral rights, namely the right of attribution, the right to prevent false attribution, and the right to ensure that the use of knowledge respects the cultural norms and practices of the beneficiaries and aligns with the nature of moral rights associated with TCEs. The only additional provision for the first category of sacred, secret, or closely held TCEs is "prohibit[ing] use or modification which distorts or mutilates a [protected] traditional cultural expression or that

[25] WIPO (n 22) Article 5, Alternative 2, 5.1; Facilitators' Alternative, 5(a)-(b).

otherwise diminishes its cultural significance to the beneficiary."[26] This provision does not emphasise damage to the creator's reputation, as in conventional copyright law, but rather the potential harm to the cultural significance of the TCE for Indigenous peoples.

In reality, the requirement that TCEs be used in accordance with their original cultural norms and practices may already encompass concerns about diminishing cultural significance. Therefore, under Alternative 3, the moral rights protections remain the same across all three categories of TCEs, despite differences in economic rights protection.

2.2.4 Comparison

Since the classification and protection approaches adopted in the different alternatives mentioned above still have slight variations, the following comparison table (**Table 1**) provides a concise overview of the differences between these versions.

Table 1: Tiered Protection Approach in the WIPO *Protection of Traditional Cultural Expressions: Draft Articles* (2023 Version)

Classification	**Alternative 1**	**Alternative 2**	**Facilitators' Alternative**	**Alternative 3**
Sacred Secret Closely held	**No distinction** → All protected	**Access is restricted, including secret and sacred** → Exclusive rights (economic rights) →Moral rights protection		**Sacred, secret, and closely held** → Exclusive rights (economic rights) →Moral rights protection

[26] WIPO (n 22) Article 5, Alternative 3, 5.1

Publicly availabl e		**No longer under exclusive control but still distinctively associated with the beneficiaries ' cultural identity** →Moral rights protection →Post-use compensatio n rights (or fair and equitable benefit-sharing)	**Unrestricte d access** → Moral rights protection → Post-use compensatio n rights (or fair and equitable benefit-sharing)	**Publicly available but not yet widely known** → Moral rights protection → Users must make their best efforts to reach an agreement with beneficiaries
Widely known	Not protected	Not protected	Not protected	Encouraged to respect moral rights

Source: Compiled by the author.

3. EXCEPTIONS AND LIMITATIONS IN THE WIPO TCES DRAFT

Designing different exceptions and limitations (commonly referred to as 'fair use' in the United States) for various types of traditional cultural expressions (TCEs) poses a significant challenge. In the WIPO IGC's ongoing discussions, another key document, the *Protection of Traditional Cultural Expressions: Updated Draft Gap Analysis*, specifically points out that many exceptions and limitations under copyright law are not suitable for the protection of TCEs.[27] Others have also argued that adopting an open-ended fair use provision like the United States model

[27] WIPO, *Report of the Forty-Ninth Session of Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore* 'The Protection of Traditional Cultural Expressions: Updated Draft Gap Analysis' WIPO/GRTKF/IC/49/7, 9-10.

is even less appropriate, as it fails to account for the unique characteristics of TCEs.[28]

Article 7 of the *WIPO Draft Articles* sets out the exceptions and limitations applicable to TCE. It includes three alternatives and a Facilitators' Alternative.

3.1 Model 1: General Authorization Approach

The wording of Alternative 1 is highly vague, stating only that Member States may establish various legitimate exceptions and limitations, referencing what is necessary to protect the public interest and subject to agreements with beneficiaries.[29]

The Facilitators' Alternative also follows this model but introduces specific limitations when establishing exceptions and limitations, including: 1. They must not unreasonably prejudice the legitimate interests of beneficiaries, while also considering the legitimate interests of third parties. 2. They must not contradict customary laws governing the use of TCEs by beneficiaries. 3. The views of Indigenous peoples and local communities must be taken into account when developing any exceptions and limitations.[30]

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[28] Natalie Stoianoff & Evana Wright, 'Fair Use and Traditional Cultural Expressions' in Susan Corbett and Jessica Lai (eds), *Making Copyright Work for the Asian Pacific: Juxtaposing Harmonisation with Flexibility* (ANU Press 2018), 84.

[29] WIPO, 'The Protection of Traditional Cultural Expressions: Draft Articles' WIPO/GRTKF/IC/49/5, 4 October 2024, Article 7, Alternative 1.

[30] WIPO (n 29) Article 7, Facilitators' Alternative.

3.2 Model 2: Incorporation of Copyright Law Exceptions and Limitations

The second model proposes directly incorporating the exceptions and limitations permitted under copyright law as the exceptions and limitations for the protection of TCEs.

Alternative 2 (Article 7.1) explicitly states:

> Acts permitted under national laws concerning works protected by copyright, trademarks protected under trademark law, or subject matter protected under other intellectual property laws shall not be prohibited under the protection of traditional cultural expressions.[31]

Alternative 3 (Article 7.5) further expands this principle, stating that all general exceptions applicable to copyright protection may also serve as exceptions for Indigenous TCEs:

> Except for secret traditional cultural expressions (which shall not be disclosed), any exceptions allowed under national intellectual property laws, including works protected by copyright, trademarks protected under trademark law, and subject matter protected under industrial design rights, patents, utility models, or design patents, shall not be prohibited under the protection of traditional cultural expressions.[32]

3.3 Model 3: Specific Exceptions and Limitations

The third model directly specifies concrete exceptions and limitations. Alternative 2, in addition to incorporating all exceptions and limitations recognized under copyright law, also proposes that at least the following three specific circumstances should/could be recognised

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31 WIPO (n 29) Article 7, Alternative 2,7.1.
32 WIPO (n 29) Article 7, Alternative 4, 7.5.

as exceptions to exclusive rights: (a) Use for learning, teaching, and research; (b) Acts of preservation, display, research, and presentation carried out by archives, libraries, museums, and other cultural institutions; (c) Creation of cultural, artistic, or creative works inspired by, adapted from, or borrowing from TCEs.[33] Additionally, two more exceptions are included: (d) Incidental use of TCEs in another work or protected subject matter; (e) Situations where the user is unaware or has no reasonable grounds to know that the TCE is protected.[34]

Alternative 3 has a more complex design, adopting both general exceptions and specific exceptions.

For general exceptions (Article 7.1), it provides that Member States may establish appropriate exceptions and limitations in consultation with beneficiaries, while ensuring compliance with four key principles: 1. Attribution should be provided to beneficiaries where possible; 2. The use should not be offensive or degrading to beneficiaries; 3. The use should comply with fair use/fair dealing/fair practice principles; 4. The use should not unreasonably prejudice the legitimate interests of beneficiaries, while also considering the legitimate interests of third parties.[35] For specific exceptions (Article 7.3), it stipulates that under the consultation mechanism and conditions in Article 7.1, the following three exceptions may be applied: (1) Teaching, learning, and research; (2) Preservation, [display], research, and presentation of TCEs by archives, libraries, museums, or other cultural research

33 WIPO (n 29) Article 7, Alternative 2, 7.2.
34 WIPO (n 29) Article 7, Alternative 2, 7.4.
35 WIPO (n 29) Article 7, Alternative 3, 7.1.

institutions recognised under national law; (3) Creation of original works inspired by, based on, or derived from TCEs.[36]

However, Article 7.2 emphasizes that if there is a reasonable concern that an exception or limitation would cause "irreparable harm to [sacred] or [secret] traditional cultural expressions, [Member States]/[Contracting Parties] [shall not]/ [should not]/ [may not] establish such exceptions and limitations."[37]

Article 7.4 of Alternative 3 further provides that even if an exception does not comply with the consultation mechanism in Article 7.1, Member States should still allow the following four exceptions: (1) Preservation, [display], research, and presentation of TCEs by archives, libraries, museums, or other cultural research institutions recognized under national law; (2) Creation of original works inspired by, based on, or derived from TCEs;(3) Use of TCEs legally sourced from entities other than the beneficiaries;(4) Use of TCEs that have become known outside the beneficiaries' community through [legitimate means].[38]

Both Alternative 2 and Alternative 3 include "acts of preservation, display, research, and presentation" carried out by archives, libraries, museums, and other cultural institutions. This provision is highly reasonable, as museums and cultural preservation institutions need to document, preserve, and study Indigenous records from various regions. However, Alternative 3 specifically places "display" (*display*) in

36 WIPO (n 29) Article 7, Alternative 3, 7.4.
37 WIPO (n 29) Article 7, Alternative 3, 7.2.
38 WIPO (n 29) Article 7, Alternative 3, 7.4.

brackets, indicating that whether to include it may be subject to debate among different countries. The reason for this hesitation is that "display" is more commonly associated with tangible objects or even performances involving movement and music. In contrast, the use of TCEs by Indigenous communities is often subject to restrictions based on cultural contexts. Displaying such expressions in cultural preservation institutions could violate Indigenous restrictions on their appropriate contexts of use.

4. TAIWAN CASE STUDY

At the end of 2007, Taiwan enacted the *Protection Act for the Traditional Intellectual Creations of Indigenous Peoples* (*Protection Act*), which adopts a mandatory registration system for the protection of TCEs of Indigenous peoples. Under this system, applicants must submit an application to the Council of Indigenous Peoples (CIP), the competent authority under the Act. Exclusive rights are granted only after review and approval.[39] After the legislation was passed, the CIP launched research on the formulation of subsidiary regulations in 2010. It then took nearly five more years of preparation before the *Regulations for the Implementation of the Protection Act for the Traditional Intellectual Creations of Indigenous Peoples* were officially promulgated in January 2015, marking the official start of the system's operation.[40] As of now, Taiwan's 16 Indigenous groups have registered a total of 95 traditional intellectual creations.

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39 Chih-Chieh Yang, 'Is the Registration System a Prerequisite for the Protection of Traditional Cultural Expressions?' (2022) 12(3) QMJIP 350, 353.

40 ibid 354-355.

The system was designed based on copyright law, granting both economic rights and moral rights upon obtaining exclusive rights to TCEs.[41] It also includes fair use exceptions. However, the actual effectiveness of protection could only be assessed once concrete cases emerged. The first infringement case occurred in 2018.

4.1 The Protection Act and Fair Use Provision

The scholars responsible for drafting the *Protection Act* referenced the framework and concepts of copyright law in its formulation. On the one hand, the Act incorporates the concepts of economic rights and moral rights; on the other hand, it also adopts the concept of fair use. Taiwan's copyright law incorporates both Japan's specific exceptions and limitations approach (see Articles 44 to 62 of the Copyright Act) and the U.S. open-ended fair use doctrine (see Article 65 of the Copyright Act). As a result, when drafting the exceptions under the *Protection Act*, the drafters referred to the provisions of Copyright Act and simplified the exceptions into Article 16, listing only three types of exceptions.

Article 16 of the Protection Act states:

> "(1)In the event of any of the following, published intellectual creations can be used:
>
> 1. For non-profit use by individuals or families.
>
> 2. For uses required for reporting, criticism, education or research.

[41] For an introduction on the protection of moral rights under Taiwan's Protection Act for the Traditional Intellectual Creations of Indigenous Peoples, see Chun-Chi Hung, 'Protection of Sacred Traditional Cultural Expressions: A Perspective from Taiwan' (2024) 14(2) QMJIP 208, 225-227.

> 3. fair use for other legitimate purposes.
>
> (2) Any use as mentioned in the previous paragraph should credit the source. However, such limitation does not apply if the purpose and method of use is unlikely to infringe on the rights of exclusive users and is not in violation of customary practices in society."[42]

The first exception, which permits private, non-commercial use, is based on Article 51 of Taiwan's Copyright Act.[43] The second exception, which covers reporting, commentary, education, and research, is derived from Article 52 of Taiwan's Copyright Act.[44] The third exception, "other *legitimate purposes*," is the most critical. This phrase was partially inspired by the latter part of Article 52 of Taiwan's Copyright Act, which also refers to "other legitimate purposes." However, the language is drafted in an open-ended manner, allowing any claim of a legitimate purpose to potentially qualify as fair use. As a result, this provision also draws from Article 65 of Taiwan's Copyright Act, which adopts the open-ended fair use concept from U.S. copyright law, encompassing a broad range of potential fair use scenarios with almost no restrictions. This broad scope is explicitly referenced in the legislative intent, which states that Article 16 was drafted with reference to Article 65 of the Copyright Act. Additionally, the legislative explanation cites Article 30, Paragraph 1 of the old

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42 Protection Act for the Traditional Intellectual Creations of Indigenous Peoples 2007, Article 16 (Taiwan).

43 Copyright Act 2019, Article 51 ("Within a reasonable scope, where for nonprofit use by an individual or a family, a work that has been publicly released may be reproduced by a machine that is either located in a library or is not provided for public use.") (Taiwan).

44 ibid Article 52 ("Within a reasonable scope, works that have been publicly released may be quoted where necessary for reports, comment, teaching, research, or other legitimate purposes.").

Trademark Act (now Article 36 of the current Trademark Act),[45] which enumerates various exceptions to trademark infringement, including descriptive use, nominative use, functional necessity, and prior good-faith use.

The following discussion will examine Taiwan's first infringement case involving a registered and protected traditional intellectual creation, which highlights the issue of the overly broad scope of fair use as stipulated in the Protection Act.

4.2 The First Infringement Case

4.2.1 Ciopihay Class Attire and Pawali Song and Dance

On March 22, 2017, the Kiwit Tribe, belonging to the Amis People, applied for exclusive rights over the attire of their warriors (Ciopihay), referring to men aged between 17 and 20, belonging to the second class, as well as the festival performance "Pawali Song and Dance of the Ciopihay Class," a traditional song and dance led by elders to train young warriors during their annual festival. After examination, the Council of Indigenous Peoples ("CIP") certified both applications on April 4, 2018.

Later, on August 1, 2018, during Taiwan's Indigenous Peoples' Day, the CIP hosted the Southern Island Forum. At the opening ceremony, the Indigenous Peoples Cultural Development Center, a department

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[45] Trademark Act 2003, Article 30(1) (provides exceptions to trademark rights. Subparagraph (1) pertains to nominative and descriptive fair use. Subparagraph (2) pertains to use necessary for functionality. Subparagraph (3) pertains to bona fide prior use) (Taiwan).

under the CIP, arranged for dancers to wear Ciopihay attire and perform the "Pawali Song and Dance of the Ciopihay Class."

A few days later, the Kiwit Tribe issued a public statement, accusing the CIP of using their registered attire, dance, and song without authorisation, thereby infringing upon their exclusive rights to traditional intellectual creations. The Kiwit Tribe claimed that two registered traditional intellectual creations had been infringed upon: (1) Ciopihay attire of the Amis Kiwit warriors, and (2) Pawali Song and Dance of the Ciopihay Class. The Kiwit Tribe demanded that the CIP and the Indigenous Peoples Cultural Development Center immediately seek authorisation and obtain consent upon receiving the warning letter, and publicly apologise for their unlawful infringement.

It is worth noting that in the initial statement, only the two aforementioned traditional intellectual creations were mentioned. However, in the later stages of the lawsuit, a third traditional intellectual creation called "Kahahayan" which is the Soul-Sending Ritual Song of the Amis Kiwit Tribe, was seemingly added to the case.

As the competent authority responsible for enforcing the *Protection Act*, the CIP naturally did not issue an apology lightly. Instead, it released a public statement, asserting that its actions fell within the fair use exception for legitimate purposes under Article 16, Paragraph 3 of the Protection Act.[46] On March 2022, the Taipei District Court issued a

[46] Taiwan Council of Indigenous People, 'CIP's Response to the Exclusive Rights Holder of the Amis Kiwit Tribe's Traditional Intellectual Creation' (7 August 2018) https://www.facebook.com/apc.gov.tw/photos/a.764886236892497.1073741828.754582384589549/1762752960439148/?type=3&theater.

first-instance ruling, dismissing the Kiwit Tribe's claims on procedural grounds.[47] Dissatisfied with the ruling, the Kiwit Tribe appealed to the Taiwan High Court. In July 2024, the Taiwan High Court rendered its second-instance judgment, once again ruling against the Kiwit Tribe.[48]

4.2.2 Whether It Constitutes Fair Use for Legitimate Purposes

The court held that the Council of Indigenous Peoples organised the Austronesian Forum to promote cultural diplomacy and international exchange, and that the use of the disputed TCEs during the opening ceremony of this international event served a legitimate purpose.[49] Furthermore, in determining whether the use qualifies as fair use for a legitimate purpose, the court noted that the Protection Act was drafted with reference to Article 65 of the Copyright Act, which provides a general fair use clause, modelled on the four-factor test from American copyright law. As a result, the court ruled that the determination of fair use for a legitimate purpose must also be assessed using the four factors of fair use, including consideration of: (1) the purpose and character of the use, including whether it is for commercial purposes or nonprofit educational purposes; (2) the nature of the traditional intellectual creation; (3) the amount and substantiality of the portion used in relation to the entire traditional intellectual creation; and (4) the

47 Taipei District Court Civil Judgment, Year 109, Yuan-Chong-Guo-Zi No. 1 Case, 11 March 2022 (Taiwan).

48 Taiwan High Court Civil Judgment, Year 111, Yuan-Chong-Shang-Guo-Zi No. 1 Case, 30 July 2024 (Taiwan).

49 ibid II, E, (B).

effect of the use on the potential market and current value of the traditional intellectual creation.[50]

Regarding the first factor, the court held that the Austronesian Forum served cultural, political, and diplomatic non-profit purposes.[51] Regarding the second factor, the court found that the disputed attire, dance, and songs were "intended to be repeatedly used and presented in the future to highlight the cultural values of the tribe."[52] Regarding the third factor, the court noted that the entire Harvest Festival of the Kiwit Tribe lasts four days, whereas the disputed opening performance lasted only eight minutes, meaning that the proportion of use was minimal.[53] Regarding the fourth factor, the court stated:

> The disputed performance neither charged the audience directly or indirectly nor provided additional remuneration to the performers of the Naruwan Theater Troupe. Therefore, the impact of the use on the potential market and current value of the disputed traditional intellectual creation is minimal.[54]

4.2.3 Whether It Constitutes an Infringement of Moral Rights

Additionally, the Kiwit Tribe argued that the defendants' performance misrepresented the tribe's warrior dance, violating tribal taboos, cultural customs, and traditions, thereby offending sacred cultural prohibitions. The tribe claimed that this act violated Article 10,

50 ibid II, E, (C), 2.
51 ibid II, E, (C), 2, (1).
52 ibid II, E, (C), 2, (2).
53 ibid II, E, (C), 2, (3).
54 ibid II, E, (C), 2, (4).

Paragraph 1, Item 3 of the Protection Act, which safeguards moral rights:

> Prohibiting others from distorting, mutilating, altering, or otherwise modifying the content, form, or title of their intellectual creations in a manner that damages their reputation and infringes upon their moral rights as creators.

A tribal elder testified, stating:

> The warrior dance embodies the unity of the men in our tribe. If the warrior dance is performed incorrectly, it will offend the ancestral spirits and gods, resulting in poor harvests in the following year, as specific birds will come to peck at the rice grains, affecting the yield. Furthermore, the tribe members will suffer from illnesses one after another. If the warrior dance is performed improperly or differently, the tribe will feel deeply hurt because it disrespects our traditions.….[55]

The court referenced the tiered protection approach, stating that different types of TCEs warrant different levels of moral rights protection, though it did not cite any specific literature. The court categorised TCEs into three types: (1) TCEs with sacred attributes that must remain secret and not be disclosed; (2) TCEs that have been publicly disclosed but remain closely associated with the tribal community;(3) TCEs that are widely disseminated and broadly utilised

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[55] ibid II, F, (B).

as cultural assets. For the first category, the court ruled that any use of such TCEs that does not conform to the customs and cultural practices of the rights-holding tribe constitutes a serious offense against the tribe and should be deemed an infringement of moral rights. For the second category, the court held that determining whether an infringement of moral rights has occurred requires a comprehensive assessment, considering whether the use was intended to deliberately violate tribal cultural taboos, the degree of culpability in the violation, and the extent of harm caused to the rights-holding tribe. For the third category, referring to TCEs that have been widely disseminated or commonly used as cultural assets, the court ruled that the key factor in determining moral rights infringement should be whether the use has diminished societal respect for the rights-holding tribe.[56]

The court held that the Ciopihay attire and the Pawali-Ciopihay dance and song fall under the second category of "publicly disclosed but closely associated with the tribe" traditional intellectual creations. The court further determined that the errors in the performance by the dance troupe were not made with malicious intent to offend the appellant's cultural taboos. Additionally, the inaccuracies in the performance were considered minor. Moreover, the court reasoned that showcasing the disputed traditional intellectual creations at the opening ceremony of the Austronesian Forum could enhance the Kiwit Tribe's visibility and recognition both domestically and internationally. The plaintiff also failed to provide concrete evidence

[56] ibid II, F, (A).

proving that the performance errors resulted in external contempt, ridicule, or degradation. As a result, the court concluded that the disputed performance had not reached the level of harming the reputation of the traditional intellectual creations, and therefore did not constitute an infringement of moral rights.[57]

4.3 REVIEW AND ANALYSIS

4.3.1 Classification of TCEs

First, if we accept the tiered protection approach adopted in the *WIPO Draft Articles*, we must determine whether the disputed subject matter in Taiwan's infringement case falls under the first category of "access is restricted, including secret and sacred TCEs", or the second category of "access is unrestricted but culturally linked to the Indigenous group". It is important to note that some scholars argue that TCEs may be publicly accessible not due to the voluntary disclosure by Indigenous peoples, but because they were wrongly made public.[58] Therefore, if a TCE was improperly disclosed, making it accessible to outsiders, it should not necessarily be automatically classified as belonging to the second category.

In this case, the Ciopihay attire and the Pawali-Ciopihay dance and song are not easily accessible to outsiders. Even if the Kiwit Tribe had previously authorised non-members to perform them, such performances were only allowed under specific authorisation, meaning

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57 ibid II, F, (B).
58 Oguamanam (n 6) 9.

that access was still strictly controlled. Accordingly, these TCEs should have originally been classified under the first category.

However, in Taiwan, the *Protection Act* was initially designed as a mandatory registration system, meaning that a TCE must be officially recorded and registered to receive protection. Additionally, the original system did not provide an option for registered TCEs to remain undisclosed. As a result, TCEs that were initially restricted in access were effectively forced to become publicly available in the registration database in order to receive protection. This is a serious flaw in Taiwan's system.[59] This also led to the court seemingly assuming that once a TCE has been registered, it no longer qualifies as a first-category TCE with restricted access.

4.3.2 Appropriateness of Exceptions and Limitations / Fair Use Provisions

In this case, the court made several errors in applying the four factors. Regarding the first factor, the Austronesian Forum was indeed a non-profit event, and this determination was correct. However, the remaining three factors were misapplied. For the second factor, the attire and adult warrior dance are subject to strict usage restrictions, yet the court wrongly characterized these creations as being intended for future use by later generations. This misrepresented the nature of the protected TCEs. For the third factor, the main infringing subjects were the Ciopihay attire and the Pawali dance and song of the Ciopihay class, but the court compared the performance to the four-day-long Soul-Sending Ritual, confusing the three distinct protected TCEs and

[59] Yang (n 39) 355-362.

deliberately arguing that an eight-minute performance was insignificant compared to a four-day ritual. For the fourth factor, as acknowledged in the ruling, the disputed adult warrior dance had previously been licensed for a fee. Since the Kiwit Tribe had commercially licensed it before, the unauthorised use in this case clearly harmed their economic interests.

Even if the court had correctly applied the four factors, the bigger issue lies in the legislative design itself as Taiwan's *Protection Act* should never have adopted an open-ended, U.S.-style fair use provision as an exception. TCEs are inherently connected to the religion and daily life of the respective Indigenous peoples or tribes, meaning they should not be freely used by outsiders.

Therefore, under Model 2 of the WIPO Draft Articles, which proposes incorporating all exceptions and limitations recognised under existing copyright laws, this is not an appropriate provision. Such an approach would only be acceptable if exceptions and limitations under copyright law were strictly limited to "unrestricted-access" TCEs. A better model can be found in Alternative 3 of Article 7, Section 7.3 of the WIPO Draft, which explicitly states that if a TCE falls into the first category of "restricted access, including secret and sacred expressions," it should not be subject to exceptions and limitations.

Returning to the specific usage in this case, the performance took place at the Austronesian Forum, an event exclusively organized for Indigenous peoples from Southeast Asia and the Pacific region. Among the various versions of the WIPO Draft, the closest relevant exception is: "1. Use by archives, libraries, museums, or other cultural

research institutions recognized under national law for preservation, [display], research, and presentation." However, this event was organised by the Council of Indigenous Peoples as an official diplomatic initiative and was held at a grand hotel rather than within a cultural institution. While it involved a form of "display," it was not conducted within a cultural institution. Thus, considering both the organizing entity and the purpose of the event, this cannot be classified as a "cultural institution display."

Therefore, even if the WIPO Draft were referenced when determining whether the use in this case qualified as a legitimate purpose under Article 16 of the Protection Act, the situation still would not align with the circumstances described in the WIPO Draft. Moreover, it is important to note that in Alternative 3 of Article 7 of the WIPO Draft, the word "display" is placed in brackets, indicating that there is still debate over whether "display" should be included as an exception. This reflects the concern that while some Indigenous peoples may accept their traditional culture being preserved, researched, or introduced within cultural research institutions, they may not be willing for it to be "displayed" purely for public viewing.

4.3.3 Protection of Moral Rights

In the second-instance ruling of the Kiwit case, the court adopted the tiered protection approach, holding that moral rights protection should also vary among different categories of TCEs. However, in the WIPO Draft, the three-tier classification primarily applies to economic rights, establishing three different levels of protection. Regarding moral rights, an examination of various versions of Article 5 in the

WIPO Draft does not reveal any differentiation in the strength of moral rights protection based on the type of TCE.

It is unclear what legal source the Taiwan High Court relied upon when determining that different categories of TCEs should receive varying levels of moral rights protection. It is uncertain whether the court based its ruling on an academic or legal source or if it independently formulated this distinction.

Furthermore, disregarding the court's reasoning and focusing solely on Article 10, Paragraph 1, Item 3 of Taiwan's Protection Act, which states: "Prohibiting others from distorting, mutilating, altering, or otherwise modifying the content, form, or title of a traditional intellectual creation in a way that damages its reputation," it becomes clear that this provision is also problematic. This clause was modelled after copyright law, but TCEs do not have a clearly identifiable individual creator, making it difficult to determine whose reputation is harmed by modifications. The moral rights of TCEs are not about individual reputation, but rather about violations of traditional practices that an Indigenous community adheres to. Therefore, the wording of Taiwan's Protection Act in this regard is also inappropriate.

If Alternative 2 of Article 5 of the WIPO Draft were referenced, the use of TCEs must respect their integrity; if Alternative 3 were referenced, the use must respect the original cultural norms and practices. It is crucial to recognize that the protection of TCEs is not solely about economic benefits but it is fundamentally about respecting Indigenous peoples and their traditions. Consequently, the protection

of moral rights may hold even greater significance than economic rights in this context.

5. CONCLUSION

Taiwan is one of the few countries in the world that early on enacted a dedicated law to explicitly protect TCEs. However, because this legislation was introduced relatively early, its design contains several shortcomings. The mandatory registration system it adopts has led to various issues. The first infringement case in 2018, followed by the Taiwan High Court's ruling in 2024, highlights how the Act's provisions on moral rights and fair use were overly modelled after copyright law, making them inappropriate regulatory approaches.

This article introduced key provisions of the WIPO TCEs Draft, including the tiered protection approach, its different levels of protection for economic and moral rights, and its exceptions and limitations. While the WIPO TCEs Draft still contains multiple alternative proposals, and the final approach to be adopted remains uncertain, comparing these models with Taiwan's case law allows us to critically evaluate and consider which approach would be most suitable.

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REFORMING EU DESIGN LAW: A CRITICAL ANALYSIS OF REGULATION (EU) 2024/2822

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Abstract

The European Union's design protection framework, initially established through Council Regulation (EC) No 6/2002, has served as a cornerstone for providing designers and enterprises with uniform protection across Member States. In response to technological advancements, evolving market dynamics, and stakeholder feedback, the EU enacted Regulation (EU) 2024/2822, introducing comprehensive reforms. This article critically examines the revised regulation, analyzing its origins, objectives, substantive changes, implementation challenges, and anticipated implications for the future of design protection in the European Union.

Keywords: *EU Design Law, Regulation (EU) 2024/2822, Intellectual Property, Design Protection, Legal Reform.*

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I. INTRODUCTION

The EU design system emerged as part of broader efforts to harmonize intellectual property regimes within the internal market. Introduced in

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2002, it established a unitary design right, enabling protection throughout the EU via a single application. This approach aimed to reduce legal fragmentation, enhance market integration, and stimulate innovation by offering predictable and efficient legal safeguards.[1] Over time, the system gained significant traction, with widespread adoption by domestic and international applicants alike, confirming its functional and strategic value.[2]

Over its two decades of operation, the EU design system[3] has demonstrated considerable effectiveness in streamlining rights acquisition and reducing administrative burdens for designers and enterprises. It has contributed to strengthening the internal market by offering a predictable legal environment and reinforcing the role of design as an economic driver. The framework has also proved instrumental in fostering innovation ecosystems and supporting small and medium-sized enterprises (SMEs) that rely on design-intensive activities.

Despite these achievements, the system increasingly shows structural limitations in addressing challenges posed by digitalization, technological disruption, and new modes of production, highlighting the need for regulatory adaptation. For instance, technological innovation, particularly the proliferation of digital design tools, virtual

1 T Margoni, 'Not for designers: On the Inadequacies of EU Design Law and How to Fix It' (2013) 4(3) JIPITEX 225.

2 A Kur, M Levin and J H Schovsbo, 'The EU Design Approach–a global appraisal', in *The EU Design Approach: A Global Appraisal* (Edward Elgar Publishing, Cheltenham 2018) 251.

3 Council Regulation (EC) 6/2002 of 12 December 2001 on Community Designs [2002] OJ L3/1.

products, and additive manufacturing technologies, exposed inherent limitations in the scope and applicability of existing protections.[4] In parallel, the European Commission's 2015 Communication on "Better Regulation" underscored the necessity for periodic legislative reviews to ensure continued relevance and efficacy.[5] Institutional calls from the European Parliament and the Council further catalyzed reform, emphasizing the need to clarify legal ambiguities, enhance procedural efficiency, and tailor the system to better support SMEs, which constitute the backbone of the EU economy. Therefore, as a response to these rapidly evolving technological paradigms, shifting market dynamics, and extensive stakeholder feedback, the EU has introduced a comprehensive reform through Regulation (EU) 2024/2822.[6]

II. THE REVISED CONTOURS OF DESIGN PROTECTION

A. EXPANDED DESIGN DEFINITION

The revised Regulation has introduced several substantive innovations, foremost being an expanded design definition, which now expressly encompasses digital and animated elements, ensuring comprehensive coverage for contemporary and emerging design formats.[7] This

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4 Spyros Sipetas, 'The copyright and design protection interplay post-Cofemel: continuity or recalibration?' (2025) 20(2) JIPLP 92.

5 European Commission, 'Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Better regulation for better results – an EU agenda', COM (2015) 215 final <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52015DC0215&from=EN> accessed 8 September 2025.

6 Regulation (EU) 2024/2822 of the European Parliament and of the Council of 23 October 2024 amending Council Regulation (EC) 6/2002 on Community designs and repealing Commission Regulation (EC) 2246/2002 [2024] OJ L 2822/1.

7 Article 3(1) of Regulation (EU) 2024/2822 of the European Parliament and of the Council of 23 October 2024 amending Council Regulation (EC) 6/2002 on

modification acknowledges the increasing prevalence of dynamic, interactive, and purely digital designs in commercial contexts, reflecting the transformed nature of design innovation in the digital economy.

The Regulation explicitly brings digital design files, such as those used in 3D printing, within the ambit of legal protection, addressing a critical gap in the earlier framework. Under the original Council Regulation (EC) No 6/2002, the protection of designs was primarily conceived in terms of physical products and their visible features. This was suitable in a pre-digital era, but with the acceleration of technologies like computer-aided design (CAD) and additive manufacturing, the regulatory framework increasingly lagged behind.

A major deficiency in the previous regulation was its ambiguity regarding non-physical or virtual design representations, particularly digital design files that could be used to manufacture protected designs via additive manufacturing. These files, which contain the geometric data necessary to reproduce a design, were often not treated explicitly as subject matter for design protection, creating uncertainty around their legal status. Consequently, enforcement against unauthorized sharing or use of such files was difficult, and design holders were left exposed to digital infringement that was not clearly covered by the Regulation.

Community designs and repealing Commission Regulation (EC) 2246/2002 [2024] OJ L2822/1.

Recognizing this shortcoming, the revised EU Design Regulation explicitly extends protection to digital representations of designs, including files used in 3D printing. Article 1(3)(b) of the revised Regulation broadens the definition of a "product" and a "design" to include "non-physical products."

Moreover, recital language and explanatory notes in the Regulation make it clear that digital files used for the reproduction of a design, including 3D printing templates, fall within the scope of enforceable rights.[8] This inclusion achieves several critical objectives, like, it prevents the unauthorized distribution of design files intended to reproduce protected designs, treating such acts as infringement. It also clarifies that digital transmission of design embodiments (even absent physical reproduction) can constitute an act of use subject to the design right holder's consent. Thus, it aligns the design regime more closely with existing frameworks in copyright and trademark law, which already provide protection for digital formats and transmissions.

B. Balancing Expression Rights and Design Protection

Despite the Regulation's modernized architecture, several unresolved challenges remain. One perennial challenge in intellectual property law is achieving a workable balance between exclusive rights granted to creators and the public interest in free expression, creativity, and democratic discourse. This tension becomes particularly acute in

8 Regulation (EU) 2024/2822 of the European Parliament and of the Council of 23 October 2024 amending Council Regulation (EC) 6/2002 on Community designs and repealing Commission Regulation (EC) 2246/2002 [2024] OJ L 2822/1, recital 14.

design law, where the boundaries between artistic expression, commercial functionality, and consumer communication often blur.

The revised Regulation (EU) 2024/2822, while modernizing and expanding protection for design holders, raises important questions about how these exclusive rights interact with non-commercial and expressive uses of design, such as parody, satire, critical commentary, and broader artistic endeavors. As design becomes increasingly central to visual culture and digital media, the potential for overlap, and conflict, between IP rights and fundamental freedoms becomes more pronounced.

Design rights, as codified under EU law, provide the exclusive right to use a design and prevent others from using it without consent. However, these rights are not absolute. Article 20 of the former Council Regulation (EC) No 6/2002 already recognized exceptions for acts done privately and for non-commercial purposes.[9] The revised Regulation 2024/2822 does not radically depart from this foundation thus, reopening the debate on how far such exceptions should stretch—especially in a digital society.

Article 11 of the EU Charter of Fundamental Rights[10] and Article 10 of the European Convention on Human Rights (ECHR)[11] protect freedom of expression, including artistic freedom and parody. The Court of Justice of the European Union (CJEU) has recognized these

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9 Council Regulation (EC) 6/2002 of 12 December 2001 on Community Designs [2002] OJ L3/1, art 20.

10 Charter of Fundamental Rights of the European Union OJ C 326/2.

11 European Convention for the Protection of Human Rights and Fundamental Freedoms (as amended by Protocols Nos 11, 14 and 15) ETS No 5 (4 November 1950).

rights in various IP contexts, most notably in *Deckmyn v. Vandersteen* (C-201/13),[12] where it clarified that parody can constitute a legitimate exception to copyright. However, this case law has not yet been comprehensively extended to the realm of design law.

This potential tension manifests in several overlapping contexts. Artistic reinterpretation often involves artists incorporating recognizable design elements such as fashion silhouettes or furniture shapes into installations, films, or performances that serve critical or satirical purposes. Similarly, satirical content in digital media and memes frequently involves visual references to iconic designs, including consumer electronics, designer goods, and automotive designs, to mock, critique, or convey political messages. Additionally, cultural remixing has become commonplace as individuals repurpose design content for humor, commentary, or mashups that do not fit cleanly into "private and non-commercial" use categories but are also not strictly commercial in intent.

C. MAINTAINING TECHNOLOGICAL NEUTRALITY

One of the key challenges facing any legislative framework in the digital age is the principle of technological neutrality. This principle holds that laws should apply equally across current and future technologies, ensuring that legal protections and obligations are not rendered obsolete by innovation. In the context of design protection under Regulation (EU) 2024/2822, this issue has gained new urgency. As the

[12] Case C-201/13 Deckmyn and Vrijheidsfonds v Vandersteen and Others [2014] ECR I-8843.

design ecosystem rapidly evolves, shaped by digital modeling, additive manufacturing, virtual and augmented reality (VR/AR), and artificial intelligence (AI), the risk of regulatory obsolescence increases.

In legal theory, technological neutrality means that laws should not favor or discriminate against any particular technology, platform, or mode of implementation. It serves two main purposes: durability, ensuring laws remain relevant and applicable despite innovation or disruption; and equity, treating all technologies equally to avoid distortions in market behavior or innovation paths.

In intellectual property law, this principle ensures that protections apply regardless of the medium in which creativity is expressed or commercialized. In the design context, this means treating a design rendered in 3D CAD files, VR simulations, or AI-generated formats no differently than one embodied in physical products—provided the essential criteria of novelty and individual character are met.

The emergence of new design technologies and modes of dissemination has significantly expanded the scope and complexity of what constitutes a "design" and how it is used. 3D printing and additive manufacturing enable rapid, decentralized reproduction of design objects directly from digital files. Augmented and virtual reality allow for design experiences that are immersive but not fixed in physical space, challenging traditional notions of "appearance" and "product." AI-generated designs raise questions about authorship, novelty, and ownership when design output is autonomously created or heavily assisted by algorithmic systems. Digital twins and dynamic designs involve constantly evolving digital replicas that may change

depending on context or user input, complicating the requirement of fixed design representations. These innovations demand a regulatory framework that is sufficiently flexible to accommodate shifting forms, formats, and functions—without constant legislative overhaul.

The revised Regulation takes several commendable steps toward technological neutrality. The definition of a design now explicitly includes "animated, motion, and multimedia designs," as well as those "represented in digital form," recognizing the shift from static to dynamic and from physical to virtual embodiments.[13] The inclusion of non-physical products through Article 1 of the Regulation entails protection for designs that exist only in digital environments, such as user interfaces, screen displays, icons, and virtual fashion items, thus moving beyond traditional physical boundaries. Moreover, the regulation confirms that digital files used for reproducing designs fall within the scope of protection. This provision helps future-proof enforcement mechanisms against digital piracy or unauthorized replication.

However, despite these advancements, true technological neutrality remains aspirational rather than fully realized, due to structural, interpretive, and practical limitations. Design law's traditional reliance on visual appearance and static representation may struggle to cope with non-visual, interactive, or evolving designs. Courts and examiners may find it difficult to apply established legal concepts such as

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[13] Regulation (EU) 2024/2822 of the European Parliament and of the Council of 23 October 2024 amending Council Regulation (EC) 6/2002 on Community designs and repealing Commission Regulation (EC) 2246/2002 [2024] OJ L 2822/1.

"individual character" or "informed user perception" to AR objects or AI-generated designs. Design applications must still be submitted using prescribed file types and visual representations. While EUIPO has improved support for video files and 3D CAD uploads, the system still presumes a degree of standardization that does not reflect the diversity of digital design expression. This can lead to rejection of innovative applications due to format incompatibility, unequal treatment of novel or hybrid designs, and legal uncertainty about registrability of future, immersive formats.

One of the most pressing challenges is how to treat designs generated autonomously by artificial intelligence. While the Regulation does not explicitly address AI authorship, EUIPO and other stakeholders acknowledge that the law still assumes human origin as a precondition for protection.[14] This raises complex questions about whether an AI-generated design can be protected under a human user's name, whether the AI system's contribution is legally "neutral" or requires a new category, and whether lack of clarity will discourage innovative AI-driven design practices.

Maintaining technological neutrality is also complicated by the decentralization of design dissemination. With digital files shared on blockchain-based platforms, decentralized marketplaces (e.g., NFTs), and peer-to-peer networks, it becomes increasingly difficult to apply territorial enforcement models uniformly. This lack of congruence between the unitary character of EU design rights and the non-

[14] European Commission, 'Trends and Developments in Artificial Intelligence and Intellectual Property,' COM (2020) 19 final.

territorial nature of digital platforms challenges legal predictability and uniform application.

D. Introduction of Registration Symbol

A standardized registration symbol (ⓓ) has been introduced to enhance public awareness and to signal design protection under Article 26a. This seemingly minor addition serves important notice functions, alerting potential users to protected status and facilitating more transparent market interactions.

E. Centralization of Administrative Procedures

One of the most significant structural reforms introduced by Regulation (EU) 2024/2822 is the complete centralization of design registration procedures under the European Union Intellectual Property Office (EUIPO). This development represents a continuation and intensification of the EU's longstanding policy objective to harmonize and streamline the administration of intellectual property rights across the internal market.

Under the original design framework established by Council Regulation (EC) No 6/2002, applicants could already apply for protection of a Registered Community Design (RCD) through a single application filed at the EUIPO. However, several administrative steps like publication, renewal, and certain oppositions, could still involve national authorities in various indirect ways, especially when disputes or enforcement actions intersected with national jurisdictions.

As digitalization increased and cross-border business models became the norm rather than the exception, the need for a more unified,

efficient, and accessible system became evident. The previous arrangement, while conceptually centralized, still entailed procedural complexities that created uneven user experiences and imposed disproportionate burdens, especially on SMEs and individual designers. By fully consolidating these processes within the EUIPO, the new Regulation eliminates residual fragmentation, ensuring a more consistent, predictable, and user-friendly framework that better aligns with the realities of a digital and borderless economy.

III. CUSTOMS AND ENFORCEMENT IMPLICATION

For design right holders in the European Union, border control represents a critical first line of defense against the influx of counterfeit or unauthorized replicas. Regulation (EU) 2024/2822 expands the scope of design protection at the border by addressing goods in transit, where customs officials may now detain counterfeit goods passing through the EU, even if the final destination is a non-EU country, if the goods would infringe a registered EU design if marketed within the EU. Thereby, the new regulatory framework empowers right holders to prevent the importation of counterfeit goods, including those merely transiting through EU territory *en route* to non-EU destinations. This provision significantly strengthens the position of right owners by closing a jurisdictional loophole that previously allowed counterfeit goods to pass through EU customs when destined for external markets.

Further, the Regulation strengthens the enforcement mechanisms available to design holders as customs authorities are now explicitly empowered to intervene not only in cases of direct infringement,

goods in transit but also in more nuanced scenarios such as digital reproduction inputs. The Regulation suggests that design files used for reproduction via 3D printing, where embedded in physical carriers (e.g., USB drives) or transmitted across borders, can also fall within the scope of border enforcement. This expansion aligns design law enforcement more closely with the customs framework already in place under Regulation (EU) No 608/2013,[15] which governs customs actions against IP-infringing goods.

Despite stronger legal tools, several complexities complicate effective enforcement. Design rights are inherently visual and often highly stylized, which complicates customs inspections. Unlike trademarks or patents, which are based on textual identifiers or technical claims, design infringement often requires subjective visual comparison. Customs officers may lack the specialized knowledge to assess subtle visual similarities between registered designs and the goods inspected. Furthermore, visual comparison is not easily automated, and customs procedures are time-bound, requiring swift decisions to avoid disruption of legitimate trade.

The inclusion of goods in transit under enforcement mechanisms also raises legal and diplomatic sensitivities. Detaining goods not intended for EU markets may raise questions about extraterritorial overreach, especially if the goods are lawful in the destination country. Businesses engaged in legitimate parallel trade or re-export activities may face

[15] Regulation (EU) 608/2013 of the European Parliament and of the Council of 12 June 2013 concerning customs enforcement of intellectual property rights and repealing Council Regulation (EC) 1383/2003 [2013] OJ L 181/15.

unjustified delays or losses, leading to disputes and liability claims against customs authorities. The CJEU has previously addressed this issue in *Philips and Nokia* (Joined Cases C-446/09 and C-495/09),[16] emphasizing that enforcement against goods in transit must be based on evidence or indications of diversion to the EU market, not mere suspicion. Regulation 2024/2822 aims to clarify this, but practical thresholds for such evidence remain ambiguous.

As digital design files become protected subject matter, customs enforcement must also grapple with the challenge of detecting and intercepting intangible goods. Design files transmitted over the internet or stored on cloud servers are not subject to traditional customs inspection, and even physical carriers may be difficult to detect or justify seizure. Infringing digital content may be encrypted or embedded in innocuous formats, making detection technically and legally complicated. Furthermore, enforcement across digital borders implicates data protection rules, such as, General Data Protection Regulation (GDPR)[17] and raises questions about jurisdictional authority.

IV. REVISED REPAIR CLAUSE

A landmark feature of the new design Regulation is the introduction of a permanent repair clause.[18] This long-debated provision permits

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16 Joined Cases C-446/09 and C-495/09 Philips and Nokia [2011] ECR I-13757.

17 Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing and repealing Directive 95/46/EC (General Data Protection Regulation) [2016] OJ L/1.

18 Arnaud Folliard-Monguiral and David Rogers, 'The legislative reform's great designs' (2025) 20(3) JIPLP 195.

the use of protected designs for repairing complex products, provided consumers are adequately informed, thereby curbing potential monopolistic practices while preserving consumer choice through the insertion of Article 20a.[19] This represents a careful balancing of intellectual property rights with competition concerns, particularly in sectors where repair and replacement parts constitute significant aftermarkets.

Often referred to as the "must match" clause, this provision enables third parties to use protected design features when repairing complex products, under specific conditions. Historically, the spare parts debate in EU design law has revolved around whether the visible components of complex products (e.g., automotive body panels, consumer electronics housings) should enjoy full design protection when used solely for repair purposes. Article 110(1) of Regulation (EC) No 6/2002 introduced a transitional clause excluding such parts from protection "for the purpose of the repair of a complex product so as to restore its original appearance." However, it was never made permanent, leaving considerable legal uncertainty.

Regulation (EU) 2024/2822 resolves this by enacting a permanent repair clause, which establishes that the use of a design protected as a Community design shall not be regarded as an infringement if it concerns a component part used for the purpose of the repair of a

[19] Article 20a Regulation (EU) 2024/2822 of the European Parliament and of the Council of 23 October 2024 amending Council Regulation (EC) 6/2002 on Community designs and repealing Commission Regulation (EC) 2246/2002 [2024] OJ L2822/1.

complex product, so as to restore its original appearance.[20] This clause is subject to a consumer information condition: the third-party supplier must ensure that consumers are clearly informed that the component is not an original part from the original manufacturer.

The repair clause serves multiple policy goals. It promotes consumer welfare through access to affordable spare parts and prevents monopolistic practices by original equipment manufacturers (OEMs). It advances sustainability by encouraging the reuse and repair of products, aligning with the EU's Green Deal objectives.[21] Furthermore, it enables aftermarket competition by allowing independent repairers and spare parts producers to operate without infringing design rights. Finally, it fosters legal harmonization by removing inconsistencies in national approaches to the spare parts exemption, which have led to legal fragmentation and forum shopping.

However, the clause is not a blanket exception. Its operation is conditioned on three key elements. First, the repair purpose requires that use must be strictly for repairing a complex product, not for creating or selling standalone products or modified versions. Second, restoration of original appearance means the component must replicate the original visual appearance—any deviation for aesthetic reasons could disqualify the use. Third, consumer information requires that the supplier must explicitly and clearly inform the purchaser or

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20 ibid.

21 European Commission, Directorate-General for Research and Innovation, European Green Deal – Research & innovation call (Publications Office of the European Union 2021) https://data.europa.eu/doi/10.2777/33415.

end-user that the part is not an OEM component, designed to prevent consumer confusion and protect brand integrity.

While the clause aims to balance IP protection with consumer rights and market competition, its enforcement presents a range of legal, evidentiary, and interpretive challenges. There is no universally accepted definition of "complex product" across the EU, though the regulation defines it under Article 3(3) of the Regulation as, "a product that is composed of multiple components which can be replaced, permitting disassembly and re-assembly of the product." In other words, a complex product is made up of distinct parts that can be replaced, without compromising the integrity of the entire product. In context of the revised Regulation, component parts of a complex product used solely for repairing that product, to restore its original appearance, cannot benefit from design protection. Only parts whose appearance depends on the complex product ("form-dependent" or "must match") may benefit from the repair exemption. For instance, car bonnets or doors, which must match the vehicle's overall lines, can be covered, but wheel trim, which may attach but not match in appearance, may not qualify.

However, there is a palpable concern that interpretation will vary depending on the product type and industry. Determining whether a repair actually "restores the original appearance" is highly fact-specific. Minor variations in shape, finish, or material could prompt legal disputes, especially where the distinction between repair and customization is blurred. Enforcement depends heavily on the intent and use of the design component. Proving that a third-party part was

sold exclusively for repair purposes becomes particularly challenging in online marketplaces or international supply chains. The precise nature of consumer information requirements remains ambiguous. Questions persist regarding what constitutes "clear" information, where and how such information should be provided, and who bears ultimate liability for compliance.

Various stakeholders, such as independent manufacturers, design owners, and repairers, as well as consumers should be cognizant of the implications of the revised Regulation. Even though independent part suppliers are set to benefit from greater legal clarity and market access, they must develop robust compliance systems to label products appropriately, maintain records to demonstrate repair-focused business models, and educate retailers and distributors on disclosure obligations. The new regulatory environment creates both opportunities and compliance burdens for these market actors. While the repair clause opens significant market segments previously monopolized by OEMs, the consumer information requirements demand careful documentation, clear communication strategies, and potentially costly labeling adjustments. Smaller independent operators may find these compliance burdens particularly challenging, potentially offsetting some of the competitive advantages created by the repair clause.

Design owners will need to reassess enforcement strategies, focusing on evidence of misuse or deception rather than the mere existence of look-alike components. While the clause reduces their market exclusivity, they retain protection against deceptive use of designs, use

for non-repair or infringing purposes, and misleading branding or packaging. The challenge for design owners will be to develop nuanced enforcement strategies that distinguish between legitimate repair activities and genuine infringement, requiring more sophisticated market monitoring and evidence-gathering approaches.

Consumers stand to benefit through lower repair costs, broader choices, and enhanced right to repair. However, they may face increased confusion if information disclosures are inadequate or inconsistent, potentially undermining the policy intent. The effectiveness of the consumer information requirement will significantly influence whether consumers experience genuine market improvement or merely a shift in market complexity. Clear, standardized disclosure practices will be essential to ensure consumers can make informed choices while understanding the distinction between original and third-party components. Consumer education will therefore be an important complement to the regulatory framework, requiring collaborative efforts between industry groups, consumer associations, and public authorities.

V. Future Outlook and Recommendations

To ensure effective implementation of the new Regulation, several recommendations merit consideration. EUIPO and national IP offices should issue comprehensive guidance on interpreting and applying key provisions, including examples and templates for consumer disclosures. Such guidelines would reduce legal uncertainty and promote consistent application across diverse national contexts. Development of uniform labeling requirements and disclosure

standards across the EU would enhance legal certainty and facilitate compliance, particularly for businesses operating in multiple Member States. The implementation of systematic monitoring tools and audit trails, particularly for online sales, could help verify compliance with regulatory conditions, creating transparency and accountability throughout supply chains. Judicial clarification through preliminary rulings will inevitably be necessary, particularly regarding the scope of exceptions and the application of new provisions to emerging technologies. The CJEU's interpretative guidance will be crucial in resolving ambiguities and establishing coherent jurisprudence.

Despite the unitary character of EU design rights, residual national divergences persist. To achieve deeper harmonization, promotion of CJEU case law uniformity through cross-border judicial seminars, EUIPO workshops, and shared jurisprudential databases would enhance consistency in interpretation. National courts should receive clear guidance on applying new provisions in line with the regulation's intent, particularly regarding complex provisions such as the repair clause and digital design protections. Drawing inspiration from the Unified Patent Court, exploration of similar models for pan-European design litigation could enhance consistency and reduce forum shopping, though such structural reform would require substantial political and institutional investment.

The regulation's effectiveness will depend on leveraging digital innovation. Implementation of visual recognition technologies could improve prior art searches and enforcement, enhancing the system's efficiency and accuracy. Blockchain and similar distributed ledger

technologies may strengthen proof of design creation and ownership transfer, addressing authentication challenges in increasingly digital design ecosystems. Closer coordination between EUIPO systems and digital platforms could facilitate more effective enforcement in online environments, responding to the growing reality that much design infringement occurs in digital marketplaces and virtual environments.

VI. CONCLUSION

The transformation of the EU's design protection regime through Regulation (EU) 2024/2822 represents not merely a legislative update but a strategic realignment with the realities of a digital, innovative, and sustainability-focused Europe. The Regulation introduces substantial improvements in terms of scope, clarity, and administrative efficiency, while also addressing emerging challenges related to technological neutrality, border enforcement, and the balance between protection and competition.

However, the ultimate success of this legislative reform will depend on effective implementation, judicial interpretation, and stakeholder adaptation. Achieving the regulation's objectives will require sustained multi-institutional collaboration, comprehensive guidance, accessible education initiatives, and continuous monitoring. If successfully implemented, the revised framework has the potential to serve as a model for modern intellectual property governance, responsive to technological change, balanced in addressing competing interests, and aligned with broader societal and economic objectives.

The coming years will be critical in determining whether the ambitious vision embodied in Regulation (EU) 2024/2822 translates into tangible benefits for designers, businesses, and consumers across the European Union. As technological evolution continues to reshape design practices and markets, the flexibility and adaptability of this new legal framework will be continuously tested. The EU's commitment to periodic evaluation and stakeholder consultation provides essential mechanisms for iterative improvement, ensuring that design protection remains relevant, effective, and balanced in an increasingly complex innovation landscape.

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Artificial Intelligence, Developers, and Copyright Infringement: The Liability Dilemma

MP Ram Mohan and Sahana Simha[*]

Abstract

*Artificial Intelligence (**"AI"**) simplifies and automates tasks that typically require human effort. As such, comparing human intelligence to AI can assist in understanding the use of 'intelligence' in AI-generated works. Despite having greater capabilities than traditional computer programs, AI applications must still be trained with data by an AI developer. Once trained, the AI's internal decision-making process is a 'black box', making its outcome unpredictable. In the context of copyright law, this unpredictability of AI output creates significant ambiguity regarding liability when AI-generated works infringe copyright. To determine the appropriate apportionment of liability in case of copyright infringement by AI-generated works, we examine the role of the AI developer in relation to the training and output of an AI application. The paper explores the consequences of attempting to ascribe liability onto AI tools and outlines how different jurisdictions are attempting to address the challenges surrounding copyright infringement and AI-generated conten*t.

Keywords: *Artificial Intelligence, Copyright, Infringement, Liability, Developer.*

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INTRODUCTION

Imagine you are the author of a best-selling fiction novel that has been a global hit for more than a decade. One day, you come across a newly published work by a relatively unknown author that seems remarkably similar to your own novel. You then discover a disclaimer within the new novel: the author credits generative artificial intelligence ("AI") for assistance in drafting the story and that the author instructed the AI to draft a novel based on an overarching theme. You now face a perplexing dilemma: who do you bring an action against for copyright infringement? Is it the developer of the AI, who may have trained the model using your novel? Mind that, the developer is not in any way involved in the output of the AI.[1] Is it the user, who prompted the AI to generate the work? However, the user merely provided the overarching theme to the AI. Or could it be the AI itself, which generated a novel strikingly similar to yours despite the developer and user's limited involvement? This paper explores the complexities involved in determining liability when copyright is infringed by an AI-generated work.

There are several steps in the creation of a work by an AI application. Broadly, it involves training, decision-making, prompting, and, eventually, generating an output. Different entities undertake each of these steps. The AI developer is responsible for training the AI

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1 See generally, Zach Naqvi, 'Artificial Intelligence, Copyright, and Copyright Infringement', (2020) 24 Marquette Intellectual Property Law Review 15; Yavar Bathaee, 'The Artificial Intelligence Black Box and the Failure of Intent and Causation' (2018) 31 879.

application.[2] The user supplies prompts to the AI to create a certain work. The AI then uses its internal processes and underlying algorithms to generate a work based on the prompt, which results in an output. This illustrates that the developer and the user have limited and separate roles in connection with the AI's output.[3] These limited roles highlight the significance of the AI's operative process and warrant an inquiry into the meaning of 'intelligence' in the context of AI.

The uniqueness of AI arises from its ability to engage in activities which were previously only done by humans.[4] This is supported by the premise that AI is understood and developed in relation to human intelligence.[5] Despite AI's similarity to human activities, the recognition of personhood in AI remains a heavily debated subject. By extension, conferring authorship to AI under copyright laws is also contested.[6] The present lack of recognition for AI personhood and authorship further complicates the applicability of liability for copyright infringement in the context of AI-generated works.

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2 Naqvi, ibid. at 18; Gilles E. Gignac & Eva T. Szodorai, 'Defining Intelligence: Bridging the Gap between Human and Artificial Perspectives', (2024) 104 Intelligence 1, 9.

3 Jane C. Ginsburg & Luke Ali Budiardjo, *Authors and Machines*, (2019) 34 Berkeley Technology Law Journal 343, 434.

4 Ryan Abbott, 'Intellectual Property and Artificial Intelligence: An Introduction', in Ryan Abbott ed., *Research Handbook on Intellectual Property and Artificial Intelligence* (2022) 2.

5 John McCarthy, 'What Is Artificial Intelligence?', John McCarthy's Home Page 1, 2 (2007).

6 See generally, Daniel J. Gervais, 'The Machine as Author', (2020) 105 Iowa Law Review 2053 ; Timothy L Butler, 'Can a Computer Be an Author - Copyright Aspects of Artificial Intelligence', (1982) 4 Hastings Communications and Entertainment Law Journal 707 ; Carys Craig & Ian Kerr, 'The Death of the AI Author', (2020) 52 Ottawa Law Review 31; Ginsburg and Budiardjo (n 4).

Numerous lawsuits have been brought against companies that develop AI applications (generally referred to hereinafter as "AI companies") in recent years for violating copyright laws.[7] The aggrieved parties allege that the AI companies are using copyrighted works without permission to train the AI applications. Authors have raised concerns about copyright infringement as such unauthorized usage enables AI applications to mimic their works when prompted by a user.[8] In a tentative ruling in a lawsuit filed against *Stability AI*, the United States District Court of Northern California noted that the use of copyrighted works as training images for the AI tools constitutes direct

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7 Katie Robertson, '8 Daily Newspapers Sue OpenAI and Microsoft Over A.I. - The New York Times' *The New York Times* (30 April 2024) <https://www.nytimes.com/2024/04/30/business/media/newspapers-sued-microsoft-openai.html> accessed 17 June 2024; Michael M Grynbaum and Ryan Mac, 'The Times Sues OpenAI and Microsoft Over A.I. Use of Copyrighted Work' *The New York Times* (27 December 2023) <https://www.nytimes.com/2023/12/27/business/media/new-york-times-open-ai-microsoft-lawsuit.html> accessed 16 June 2024; Alexandra Alter and Elizabeth A Harris, 'Franzen, Grisham and Other Prominent Authors Sue OpenAI' *The New York Times* (20 September 2023) <https://www.nytimes.com/2023/09/20/books/authors-openai-lawsuit-chatgpt-copyright.html> accessed 17 June 2024; Blake Brittain, 'Getty Images Lawsuit Says Stability AI Misused Photos to Train AI | Reuters' *Reuters* (6 February 2023) <https://www.reuters.com/legal/getty-images-lawsuit-says-stability-ai-misused-photos-train-ai-2023-02-06/> accessed 17 June 2024; Dan Mangan, 'Microsoft, OpenAI Sued for Copyright Infringement by Nonfiction Book Authors in Class Action Claim' *CNBC* (5 January 2024) <https://www.cnbc.com/2024/01/05/microsoft-openai-sued-over-copyright-infringement-by-authors.html> accessed 17 June 2024; Suzanne Bearne, 'New AI Systems Collide with Copyright Law' *BBC* (1 August 2023) <https://www.bbc.com/news/business-66231268> accessed 17 June 2024; Ellen Glover, 'AI and Copyright Law: What We Know' (*Built In*) <https://builtin.com/artificial-intelligence/ai-copyright> accessed 17 June 2024.

8 Grynbaum and Mac (n 8).

copyright infringement.[9] Most of these cases are still pending before various courts. [10] The decisions are keenly watched as they will play a key role in defining copyright infringement liability issues in relation to AI-generated works.[11] This paper aims to explore the aforementioned issue by assessing the possibility and consequence of ascribing liability to AI tools, keeping in mind their 'intelligence' and resultant 'independent creation'. As a caveat, this paper does not comment on the issue of AI personhood. We examine the feasibility of counterbalancing the "intelligence" of AI, leading to autonomous decision-making and independent output, with the ascription of liability for any resulting copyright infringement, irrespective of whether personhood is conferred to AI in law.

Part I of this paper examines the meaning of the term 'intelligence' in the context of humans and artificial intelligence. Part II looks into the role of the AI developer in the entire generative process of the AI application, with a specific focus on the training stage. Part III explores the applicability of liability onto the developer and the AI itself when copyright is infringed by an AI-generated work. It also briefly discusses

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9 Sarah Andersen et al v Stability AI Ltd et al, 23-cv-00201-WHO (ND Cal, 30 October 2023).

10 ChatGPTiseatingtheworld.com, 'Status of All 24 Copyright Lawsuits v. AI Companies (Jun. 14, 2024): 1st Trial in AI Cases Nears, Thomson Reuters v. ROSS Intelligence' (*Chat GPT Is Eating the World*, 2024) <https://chatgptiseatingtheworld.com/2024/06/14/status-of-all-24-copyright-lawsuits-v-ai-companies-jun-14-2026-1st-trial-in-ai-cases-nears-thomson-reuters-v-ross-intelligence/> accessed 16 June 2024. This webpage contains a list of several lawsuits filed against AI companies for copyright infringement along with the status of each case.

11 Liability has different forms, such as strict, vicarious, joint, civil or criminal. Judicial interpretation of liability issues in relation to AI will help to explain how liability is ascribed, what kinds and to what extent.

the international landscape of the issues relating to AI and copyright. Throughout this paper, the terms 'developer' and 'programmer' are used interchangeably in relation to AI.

1. INTELLIGENCE: HUMAN AND ARTIFICIAL

'Intelligence' does not have a single definition.[12] The term is generally defined in relation to human intelligence.[13] The meaning of 'human intelligence' forms the standard for defining and comparing intelligence between humans, animals and now, machines. According to the late French philosopher Bernard Stiegler, *"what we today refer to as artificial intelligence is a continuation of the process of the exosomatization of noesis itself"*.[14] This is the anthropomorphic interpretation of AI, according to which, human qualities form the basis for defining the functions of AI.[15] Although the goal of the human-centric understanding of AI is to make machines act like humans,[16] AI is not identical to human intelligence in terms of structure and performance.[17]

Human and artificial or machine intelligence can be distinguished based on the nature of their constructs. In the context of humans,

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12 Gignac and Szodorai (n 3) 1.

13 McCarthy (n 6) 2-3.

14 Bernard Stiegler, 'Artificial Stupidity and Artificial Intelligence in the Anthropocene' (*Institute for Interdisciplinary Research into the Anthropocene*, 23 November 2018) <https://iiraorg.com/2023/10/18/artificial-stupidity-and-artificial-intelligence-in-the-anthropocene/> accessed 16 June 2024.

15 See Arleen Salles, Kathinka Evers & Michele Farisco, 'Anthropomorphism in AI', (2020) 11 AJOB Neuroscience 88; Ameet Deshpande et al., 'Anthropomorphization of AI: Opportunities and Risks', *Arxiv* (2023), http://arxiv.org/abs/2305.14784 accessed 2 August 2024).

16 Arleen Salles (n 16).

17 David Watson, 'The Rhetoric and Reality of Anthropomorphism in Artificial Intelligence', (2019) 29 Minds & Machines 417, 425.

intelligence is a psychological construct.[18] Such a construct is hypothetical, abstract and not directly observable. This means that intelligence is discerned from unobservable parts of the mind that include thoughts, emotions, and feelings, in addition to outward behaviour.[19] The psychological construct of human intelligence refers to psychological phenomena and patterns within a human's mind.[20] Artificial intelligence, on the other hand, is a computational construct. This is because AI aims to mimic the mental processes of a human by using machine learning and data processing.[21]

But what exactly is intelligence? What is the meaning of this term in the context of humans and machines?

1.1. DEFINING 'INTELLIGENCE'

As a caveat, we do not aim to examine too many definitions of 'intelligence' as it is not the only focus of this paper. The purpose of the brief exploration below is to provide a basic understanding of 'intelligence' in a way that allows for suitable comparison with definitions of artificial intelligence.

Scholars across disciplines have explored the meaning of the term 'intelligence'. Legg and Hutter argue that any definition of intelligence must be founded on fundamental and stable principles and should not be limited to specific senses, environments, goals or hardware.[22] They

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18 ibid.
19 ibid at 2.
20 ibid.
21 ibid.
22 Shane Legg and Marcus Hutter, *Universal Intelligence: A Definition of Machine Intelligence*, 17 Minds & Machines 391, 394 (2007). *("Any proposed definition [of*

propose an informal working definition of 'intelligence': *"Intelligence measures an agent's ability to achieve goals in a wide range of environments"*.[23] The authors arrive at their definition by referencing ten definitions of the term proposed by different psychologists.[24] For instance, their paper contains a reference to Walter V. Bingham's definition of intelligence, i.e., *"We shall use the term 'intelligence' to mean the ability of an organism to solve new problems"*[25] and David Wechsler's definition of the term, i.e., *"A global concept that involves an individual's ability to act purposefully, think rationally, and deal effectively with the environment"*.[26] Legg and Hutter highlight that although there are several definitions of intelligence, the commonality amongst them is that *"…intelligence is seen as a property of an individual who is interacting with an external environment, problem or situation"*.[27] This commonality is visible in other definitions of intelligence, which are discussed below.

Dr Pei Wang of Temple University proposed the following working definition of the term 'intelligence': *"Intelligence is the ability for an information processing system to adapt to its environment with insufficient knowledge and resources."*[28] Wang breaks down the definition into the

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intelligence] must encompass the essence of human intelligence, as well as other possibilities, in a consistent way. It should not be limited to any particular set of senses, environments or goals, nor should it be limited to any specific kind of hardware, such as silicon or biological neurons. It should be based on principles which are fundamental and thus unlikely to alter over time.").

23 ibid at 402.

24 ibid at 401.

25 Walter Van Dyke Bingham, Aptitudes and Aptitude Testing (Harper and Brothers Publishers, 1937) as cited in Legg and Hutter (n 23).

26 David Wechsler, *The Measurement and Appraisal of Adult Intelligence* (Williams & Wilkinds, 4 ed. 1958) as cited in Legg and Hutter (n 23).

27 Legg and Hutter (n 23) 401.

28 Pei Wang, 'On the Working Definition of Intelligence' Centre for Research on Concepts and Cognition (1995) at 5.

following key parts: information processing system, adaptation, and insufficient knowledge and resources. Information processing systems are systems that achieve tasks by taking action, which is led by knowledge and usage of its resources. These systems also have experiences and provide responses based on their interaction with their environment. Human beings can be considered as information processing systems.[29] Adaptation refers to the ability of the system to learn from its experiences. The last component of this definition is insufficient knowledge and resources, which means that the system is finite, open and works in real-time.[30]

Expanding on the definition in a later study, Wang considers intelligence as *"an advanced form of adaptation, which happens within the lifetime of a single system, and the changes it produces depend on the system's past experience."* In this study, Wang expands the meaning of 'adaptation' to include instances where the system adapts to the environment as well as the environment adapting to the system. According to Wang, a system exhibits intelligence when it makes maximum usage of available knowledge and resources, given their insufficiency and different restrictions.[31]

Upon conducting a thorough analysis of different definitions of the term, authors Gilles Gignac and Eva Szodorai define intelligence as *"maximal capacity to achieve a novel goal successfully using perceptual-cognitive*

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29 ibid. Wang says that apart from humans, computer systems, automatic control systems and even animals can be considered as information processing systems.

30 ibid.

31 Pei Wang, 'On Defining Artificial Intelligence', (2019) 10 Journal of Artificial General Intelligence 1, 19.

processes".[32] They further discuss the three main features of their definition of human intelligence. First, relates to the *"maximal capacity to solve novel problems"* and not merely intelligent behaviour. Second, human intelligence is influenced by its use in novel contexts. Third and last, intelligence consists of *"perceptual-cognitive functions",* which include mental processes and sensory aspects.[33] In other words, human intelligence is characterized by the unique human ability to 'think'.[34]

These definitions of 'intelligence' demonstrate that the term is primarily defined in relation to humans. As such, anthropomorphic interpretations of the 'intelligence' of non-human entities (i.e., AI) can provide a more harmonious understanding of human and non-human 'intelligence'. We now examine the meaning of 'artificial intelligence' and its intersection with human intelligence to outline the key elements of AI which are relevant to the discussion in this paper.

1.2. DEFINING 'ARTIFICIAL INTELLIGENCE'

In 1980, American philosopher John R. Searle, while discussing whether machines could think,[35] articulated what he conceived as weak and strong AI, which is highly relevant to the discussion on human intelligence vs artificial intelligence. On weak AI, Searle says that *"the principal value of the computer in the study of the mind is that it gives us a very powerful tool. For example, it enables us to formulate and test hypotheses in a more*

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32 Gignac and Szodorai (n 3) 2.

33 ibid at 2.

34 Mohammad Hossein Jarrahi, Christoph Lutz & Gemma Newlands, 'Artificial Intelligence, Human Intelligence and Hybrid Intelligence Based on Mutual Augmentation', (2022) 9 Big Data & Society 1, 2.

35 See John R Searle, 'Minds, Brains, And Programs' (1980) 3 Behavioral and Brain Sciences 417.

rigorous and precise fashion."[36] This definition is relevant because the AI tools that are publicly available today are types of weak AI,[37] despite its advancement compared to traditional computer programs. According to the Data and AI team at IBM, *"Artificial Narrow Intelligence, also known as Weak AI (what we refer to as Narrow AI), is the only type of AI that exists today. Any other form of AI is theoretical. It can be trained to perform a single or narrow task, often far faster and better than a human mind can."*[38] Weak AI, also known as artificial narrow intelligence ("**ANI**"), relies on human

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[36] ibid. Since the AI tools that are present today are types of weak AI, only this definition is relevant for the purpose of this paper. For reference, Searle says the following about Strong AI, "*"…according to strong AI, the computer is not merely a tool in the study of the mind; rather, the appropriately programmed computer really is a mind, in the sense that computers given the right programs can be literally said to understand and have other cognitive states. In strong AI, because the programmed computer has cognitive states, the programs are not mere tools that enable us to test psychological explanations; rather, the programs are themselves the explanations."*

[37] Several blogs in the technology sector recognize existing AI tools, including generative AI such as ChatGPT, to be narrow AI. *See* Cameron Cashman, 'What Is ChatGPT', *HP* (2023), https://www.hp.com/us-en/shop/tech-takes/what-is-chatgptaccessed 15 July 2024 (*"Despite its impressive abilities, ChatGPT is still a limited memory AI system. It is unique from other chatbots because it can call on past answers to update its current output. Unfortunately, it's limited to a single medium: text-based chat. That makes it a form of narrow or "weak" AI"*); *See* also ISO, 'What Is Artificial Intelligence (AI)?', *ISO*, https://www.iso.org/cms/render/live/en/sites/isoorg/contents/news/insights/AI/what-is-ai-all-you-need-to-know.evergreen.html accessed 23 June 2024 (*"Despite its name, weak AI is anything but weak; it is the powerhouse behind many of the artificial intelligence applications we interact with every day. We see examples of narrow AI all around us."*); IBM, 'What Is Strong AI?', *IBM* (2021), https://www.ibm.com/topics/strong-ai accessed 23 June 2024.

[38] IBM Data and AI Team, *'Types of Artificial Intelligence', IBM* (2024), https://www.ibm.com/think/topics/artificial-intelligence-types accessed 15 July 2024. (*"[Narrow AI] can't perform outside of its defined task. Instead, it targets a single subset of cognitive abilities and advances in that spectrum. Siri, Amazon's Alexa and IBM Watson are examples of Narrow AI. Even OpenAI's ChatGPT is considered a form of Narrow AI because it's limited to the single task of text-based chat"*).

involvement to facilitate learning through the provision of training data, which is explored in detail later in this paper. [39]

Gignac and Szodorai define artificial intelligence as *"the maximal capacity of an artificial system to successfully achieve a novel goal through computational algorithms"*. This definition of AI is closely related to their definition of human intelligence. The terms 'human' and 'perceptual-cognitive processes' were replaced by 'artificial system' and 'computational algorithms', respectively, in the definition of AI. John McCarthy, who coined the term 'artificial intelligence', defined it as *"the science and engineering of making intelligent machines, especially intelligent computer programs. It is related to the similar task of using computers to understand human intelligence, but AI does not have to confine itself to methods that are biologically observable."* [40] These definitions allow for a broader interpretation of intelligence and its application to distinct entities such as humans and computers. As technology develops, these definitions also will naturally evolve. Even with such a gradual expansion of the meaning of AI, understanding 'intelligence' in the context of AI will inevitably necessitate a comparison with aspects of human intelligence.

[39] At this juncture, the authors note that exploring the concept of strong AI (see n 37), also known as artificial general intelligence, is beyond the scope of this paper so we limit this discussion to examination of artificial narrow intelligence.

[40] McCarthy (n 6) 1.

1.3. Intersection of Human and Artificial Intelligence: A Case for AI Responsibility

Computers and computer programs have been viewed as tools which support human creativity.[41] To transform computers from being merely a tool to semi-creators, programmers have sought to integrate aspects of human intelligence into their design. This eventually culminated in the development of AI, which is aimed at creating a system capable of doing tasks that a human can do.[42]

Alan M Turing, in his seminal paper 'Computing Machinery and Intelligence', discussed the constituent parts of a digital computer.[43] These are: 'store', which is analogous to human memory or even paper; 'executive units' which perform the operations needed for a calculation; and 'control', which refers to the computer obeying instructions.[44] Following this description of a digital computer, Turing says that these machines are built to closely simulate humans.[45] An important question at this juncture is, if artificial intelligence is

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41 Andres Guadamuz, 'Artificial Intelligence and Copyright' (*WIPO*, October 2017) <https://www.wipo.int/wipo_magazine/en/2017/05/article_0003.html> accessed 18 May 2024. To take a very simple example, 'MS Paint' was an application which facilitated the creation and expression of art. Users were able to select from different types of tools to draw, paint and create, all within a digital space.

42 Alan M Turing, 'Computing Machinery and Intelligence' (1950) 49 *Mind* 433.

43 ibid.

44 ibid. The paper gave rise to what is referred to today as the 'Turing test'. The aim of this test is to determine whether machines can think. By making a human and a machine interact, Turing believed that if the machine was capable of providing responses in such a manner that the human would assume that the other entity is also a human, it proves that machines can think.

45 ibid. Turing says, "*The reader must accept it as a fact that digital computers can be constructed, and indeed have been constructed, according to the principles we have described, and that they can in fact mimic the actions of a human computer very closely.*"

increasingly modelled on human intelligence, at what point will the AI assume autonomy, and when will humans recognize it?

Autonomy in the context of artificial intelligence refers to the ability of the AI to carry out tasks in the absence of human control.[46] One of the unique functions of AI is its ability to learn and adapt in comparison to conventional computer programs. As the developers program the AI to have greater autonomy, allowing it to become more 'intelligent', the developer's control and influence over the AI's creations diminishes.[47] This could preclude a human's liability for the acts of the AI application.[48] Therefore, a closer look at the extent of human involvement or lack thereof in relation to AI systems will help determine how autonomous is its operational process.

There are some noteworthy aspects in which human and artificial intelligence differ that provide AI with an advantage over humans. First, structurally, human intelligence has a neural foundation, with a reliance on the sensory system, brain and neural system of the body.[49] AI is based on a silicon foundation. This increases the operability of AI as the software and hardware are not dependent on each other for the AI's functioning. As a result, it is a lot easier to transfer an AI's

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46 Matthew U. Scherer, 'Regulating Artificial Intelligence Systems: Risks, Challenges, Competencies, and Strategies', 29 (2016) Harvard Journal of Law & Technology 353, 363 . Scherer gives the examples of AI autonomy in driving and building investment portfolios.

47 ibid. at 366. (*The risks created by the autonomy of AI encompass not only problems of foreseeability, but also problems of control. It might be difficult for humans to maintain control of machines that are programmed to act with considerable autonomy."; "Control, once lost, may be difficult to regain if the AI is designed with features that permit it to learn and adapt."*).

48 ibid. at 367. ("*A loss of local control occurs when the AI system can no longer be controlled by the human or humans legally responsible for its operation and supervision."*).

49 Jarrahi, Lutz and Newlands (n 35).

learning by merely reproducing it onto another digital system. This is significantly faster than the manner in which humans dispense knowledge.[50] Second, AI applications operate at significantly high speeds, whereas the speed of the nervous system within a human is much slower than that of a computer.[51]

The third aspect in which AI and human intelligence differ is that AI, being a computer program, has the ability to directly connect and collaborate with other systems based on their 'integrated algorithms'. Humans communicate through language, which is learnt gradually, and also have a limited capacity for communication.[52] Fourth, with the appropriate algorithms in place, AI can constantly remain updated. However, human improvement is a slower process.[53]

Human and artificial intelligence have several similarities, as discussed previously. They are also different in ways that highlight the ability of AI tools to be faster at learning, operating and completing tasks, communication and collaboration, and improvement. This warrants careful scrutiny over the concept of liability being limited only to human beings. Professor Bernd Carsten Stahl of the University of Nottingham states that computers are capable of making decisions,

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50 J. E. (Hans). Korteling et al., 'Human- versus Artificial Intelligence', 4 Frontiers in Artificial Intelligence (2021) 1, 5 . *("Basic Structure: Biological (carbon) intelligence is based on neural "wetware" which is fundamentally different from artificial (silicon-based) intelligence. As opposed to biological wetware, in silicon, or digital, systems "hardware" and "software" are independent of each other.").*

51 ibid. ("*Speed:…In humans, the conduction velocity of nerves proceeds with a speed of at most 120 m/s, which is extremely slow in the time scale of computers*").

52 ibid. (*"Connectivity and communication:… Thanks to this direct connection, they can also collaborate on the basis of integrated algorithms."*).

53 ibid. *("Updatability and scalability").*

albeit not in the objective sense, but nonetheless decisions which have social consequence and impact.[54] Given that the AI-personhood issue remains contested, the focus must be on the social consequences and outcomes of the AI tool. This raises an important question: where does this understanding position the developer in the AI-generative process? The paper now examines this by looking at the roles of the developer and the AI itself in AI-generated content.

2. THE AI DEVELOPER'S ROLE IN INPUT, BLACK BOX AND OUTPUT OF AI-GENERATED WORKS

2.1. INTO THE AI BLACKBOX: PROGRAMMER'S ROLE IN TRAINING AI

As discussed in part 1.2 above, the AI tools which exist today are types of ANI.[55] Strong AI is still only a theoretical concept with no real-life examples or applications.[56] Regardless of being narrow or weak AI, it is hard to ignore the lack of the AI programmer's role in output generation. In the process of discerning 'responsibility' for content created using AI, we have to understand the nature and meaning of the developer's actions within the contours of copyright jurisprudence.

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54 Bernd Carsten Stahl, 'Responsible Computers? A Case for Ascribing Quasi-Responsibility to Computers Independent of Personhood or Agency' (2006) 8 Ethics and Information Technology 205.

55 (n 37).

56 IBM (n 38) *("Artificial General Intelligence (AGI), also known as Strong AI, is today nothing more than a theoretical concept.")*; ISO (n 38) (*"While strong AI is purely speculative with no practical examples in use today, that doesn't mean AI researchers aren't busy exploring its potential developments."*); IBM (n 38) (*"While there are no clear examples of strong artificial intelligence, the field of AI is rapidly innovating."*).

2.1.1. AI Learning and Training

A central question in differentiating between the learning methods of humans and technology is how information is absorbed. *'If a human can learn from reading books without infringing copyright, why can't a machine similarly learn from training data?'*[57] Much like intelligence, Gignac and Szodorai state that the process of learning is also a construct.[58] It is not directly observable and is discerned from related actions. They highlight that the 'probability of response' is a key factor in the meaning of learning.[59] Gignac and Szodorai define human and artificial intelligence learning as follows:

> human learning may be defined as a demonstrable change in the probability or intensity of a specific behaviour or behaviour potential, underpinned by neurological processes and cognitive strategies in response to various stimuli. This change excludes factors unrelated to learning, such as instinct or physical maturation. By comparison, AI learning may be defined as a demonstrable change in the probability or intensity of a specific response or decision-making potential in an artificial system, underpinned by computational algorithms and data.[60]

AI applications learn through a process known as machine learning.[61] Machine learning refers to the process by which a computer program

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57 Jenny Quang, 'Does Training AI Violate Copyright Law?', (2021) 36 Berkeley Technology Law Journal 1407, 1414 .Quang goes on to state that the process used for training a machine learning tool with data, involves making copies of data when it is downloaded for the purpose of training.

58 Gignac and Szodorai (n 3) 9.

59 ibid.

60 ibid.

61 Quang (n 58). See also Karen Hao, 'What Is AI? We Drew You a Flowchart to Work It Out' (*MIT Technology Review*, 10 November 2018) <https://www.technologyreview.com/2018/11/10/139137/is-this-ai-we-drew-you-a-flowchart-to-work-it-out/> accessed 17 June 2024; Karen Hao, 'What Is

uses data to learn, find patterns, and make predictions.[62] Such learning occurs when developers train the machine learning algorithms with large amounts of training data which is generally sourced from the internet and other publicly available information.[63] Considering the quantum of data used in training AI applications through machine learning, it is inevitable that the data sets contain copyright-protected material.

After feeding an AI application with data, the programmers then create algorithms to enable the processing of the data by the AI application.[64] As more data is used to train the AI, the underlying machine learning algorithm is able to fine-tune the model and improve its performance by using the additional data to identify new patterns.[65] Beyond this point, the process through which the AI tool "learns" and makes decisions with the data when prompted for an output occurs within a "black box" (which is discussed further in part 2.2 below).[66] This is

Machine Learning?' (*MIT Technology Review*, 17 November 2018) <https://www.technologyreview.com/2018/11/17/103781/what-is-machine-learning-we-drew-you-another-flowchart/> accessed 17 June 2024; Gignac and Szodorai (n 2) 9.

62 Quang (n 57) 1410; Naqvi (n 1) 18; Harry Surden, 'Machine Learning and Law', (2014) 89 Washington Law Review 87, 89

63 Teppo Felin & Matthias Holweg, 'Theory Is All You Need: AI, Human Cognition, and Decision Making', (2024) SSRN Journal, https://www.ssrn.com/abstract=4737265 accessed 3 June 2024) at 11. Felin and Matthias note that, *"To appreciate just how much data and training these models incorporate, the latest LLMs are estimated to include some 13 trillion tokens (a token being the rough equivalent of a word). To put this into context, if a human tried to read this text—say at a speed of 9,000 words/hour (150 words/minute)—it would take over 164 years to read 13 trillion words in the training dataset."* This provides some context on the amount of data used to train artificial intelligence applications through machine learning.

64 Naqvi (n 2) 18.

65 Surden (n 63) 92-93.

66 Naqvi (n 2) 19.

because the AI programmer's visibility is limited to the input and output of the AI.[67] Therefore, of the entire AI generative process, the only stage that relates to the programmer and warrants scrutiny is the data input stage.

While training AI with data, the programmer makes copies of the data by reproducing and storing it to enable processing and usage by the AI. When the dataset comprises copyrighted material and is used without permission, it may be considered as copyright infringement. Claims of copyright infringement are then instituted against AI companies wherein developers have provided the AI application with training data.[68] The question then is: do the actions of the AI developer violate copyright law?

2.1.2. *Interpreting the Programmer's Actions from the Lens of Copyright*

Copyright refers to a bundle of exclusive rights. In India, for example, these rights are specified in Section 14 of the Copyright Act, 1957 ("Copyright Act"). They include the right of reproduction, issuance of copies, performance, translation, adaptation and making cinematograph films or sound recordings in respect of the work.[69] In the context of a programmer training an AI application, the right under Section 14(a)(i) is relevant, and it reads: *"(i) to reproduce the work in any material form including the storing of it in any medium by electronic means;"*[70] The

67 ibid.
68 (n 8).
69 The Copyright Act, (1957) at s 14.
70 ibid. at s 14(a)(i).

Berne Convention for the Protection of Literary and Artistic Works, 1886 also grants the right of reproduction under Article 9.[71]

Internationally, current legislations do not address issues relating to AI, its developers and users (with the exception of the European Union's Artificial Intelligence Act which is discussed in part 3 of this paper). This necessitates the application of unrelated existing laws onto AI and its associated concerns[72], such as conferring authorship, and ascribing liability within the framework of copyright. Therefore, to outline the boundaries of an AI programmer's involvement, we examine certain niche interpretations of copyright law in the context of AI-generated works. These interpretations offer explanations that can be used to address existing issues relating to AI and copyright law that have not been addressed through statutory provisions. We explore the 'non-use' argument propounded by Professor Drassinower, the 'authorless' argument advanced by Budiardjo and Professor Ginsburg, and Professor Litman's argument advocating for copyright law reform in response to developments in the digital world. These perspectives provide insights into navigating the complexities of copyright implications in the context of AI.

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[71] Berne Convention for the Protection of Literary and Artistic Works, (1886) at Article 9. Article 9 (1) reads as: *"Authors of literary and artistic works protected by this Convention shall have the exclusive right of authorizing the reproduction of these works, in any manner or form."*

[72] See generally, Mark A Lemley, 'How Generative AI Turns Copyright Upside Down' (2024) 25 190. Lemley revisits fundamental copyright law doctrines such as the idea-expression dichotomy and the substantial similarity test for copyright infringement in the context of AI-generated works. This is beyond the scope of this paper so we limit our discussion to the issue of liability for copyright infringement by AI-generated works.

i. Drassinower's 'Non-use' Argument

A strict interpretation of Section 14(a)(i) of the Indian Copyright Act, 1957 indicates that the usage of any copyrighted works as part of an AI training data set would violate an author's rights. This would include an AI programmer's act of reproducing the work by making copies and storing it for the purpose of training and usage by the AI application. Contrasting this understanding, Professor Abraham Drassinower, in his book titled 'What's wrong with copying?', offers a perspective on whether reproduction generally amounts to copyright infringement. He says that *"Unauthorized reproduction is not per se wrongful, whether prima facie or otherwise."*[73]

Drassinower believes that copyright law does not target reproduction *per se*. A work under copyright is a "communicative act", meaning the purpose of making a copy or reproducing the work under copyright law is to recommunicate the work. However, if the reproduction of the work is merely a repetition and non-communicative, it does not constitute the '*use of the work as a work*'.[74]

Specifically in relation to digital technologies, Drassinower opines, *"merely technical reproduction incidental to the operation of a digital technology cannot give rise to liability."*[75] Technical reproductions and non-communicative uses are 'non-uses' of the work and are, therefore, not wrong under copyright law.[76] One example he uses which is analogous

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73 Abraham Drassinower, 'The Work as a Work', *in* What's wrong with copying? (Harvard University Press, 2015) at 87.

74 ibid.

75 ibid.

76 ibid. at 88.

to the current developments in copyright and AI, is internet browsing. *"To browse is to reproduce"*.[77] Just as caching facilitates fast and economic browsing on the internet, training of AI applications enables the usage of the AI. This does not give rise to copyright liability, as both caching and training are done for technical purposes.[78] The usage of copyrighted works by a developer as a part of training datasets involves technical reproduction of the works for the purpose of training. Such use is not intended to be communicative. The developer's utilization of copyrighted works in training datasets is to facilitate the operation of the AI tool. Following Drassinower's interpretation, such actions do not incur liability for the developer.

An important aspect of the right under Section 14(a)(i) is the reproduction of the work *"in any material form"*. Drassinower distinguished between *a work* and *the material form of the work*. He substantiates this difference by stating that many works can subsist in the same material form, thereby allowing for the independent creation of works. Specifically on the statutory language in relation to the reproduction right, Drassinower says:

> The crucial observation to bring into relief is that an exclusive right to reproduce the work in any material form is not an exclusive right to reproduce the material form of the work. Non-use is nonactionable. It is reproduction not of the work but only of its material form.[79]

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77 ibid. at 103.

78 ibid. *See* also *Canadian Ass'n of Internet Providers v Soc'y of Composers, Authors and Music Publishers of Canada* [2004] SCC 45.

79 ibid. at 105. Drassinower makes this observation in relation to the statutory language in the Canadian Copyright Act, 1985. Section 3(1) reads as: *"For the purposes of this Act, copyright, in relation to a work, means the sole right to produce or reproduce*

Effectively, when using copyrighted work in training data, programmers are using the material form of the work. Since this is considered as non-use, it does not give rise to any liability under copyright laws.

ii. Ginsburg and Budiardjo's 'Authorless' Argument

Copyright authorship in AI-generated works has been a heavily debated topic.[80] While this question is mostly answered in binary, there is a third possibility of AI-generated works being considered as 'authorless'. This is explored by Professor Jane Ginsburg and Luke Ali Budiardjo, who argue that an AI developer may not qualify to be an author of a work generated by an AI application because the developer cannot predict the output.

Similarly, the user of the AI application normally does not have visibility into the developer's role in setting up the AI application. Since the developer and user do not directly collaborate, the resulting output is considered as "authorless". It is noteworthy that the authorless nature of machine-generated work by AI is considered as such not because it is a machine but rather due to the absence of an author.[81]

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the work or any substantial part thereof in any material form whatever…". The language used herein is similar to the language used in Section 14(a)(i) of the Indian Copyright Act, 1957 in relation to the right of reproduction. For reference, Section 14(a)(i) of the Indian Copyright Act, 1957 reads as: "*to reproduce the work in any material form including the storing of it in any medium by electronic means;".*

80 Issues regarding authorship under copyright law in respect of AI-generated works have been discussed by many scholars. See (n 7). While this is not an exhaustive list, it is reflective of the discourse on the subject which attempts to harmonize developments in the field of technology with copyright laws.

81 Ginsburg and Budiardjo (n 4) 434. (*"Therefore, there is a possibility of a set of "authorless" outputs that come into being through the participation of two or more non-collaborating actors, neither of whom have a sufficient claim of authorship. These outputs are not necessarily "machine*

Hence, due consideration must be given to autonomous machine-generated output beyond the personhood argument under copyright law in light of the consequences or social outcome of the machine's output.[82] The limited role of the developer is once again highlighted by the 'authorless' argument in the context of AI-generated works.

iii. Litman's Argument to Reform Copyright Law

Professor Jessica Litman presents an argument for reforming copyright law to accommodate digital technology. She argues that copying is central to the use of digital technology, which is why reproduction cannot be considered as a standard for infringement.[83] An observation she makes, which is highly relevant in the context of AI, is that *"Today, making digital reproductions is an unavoidable incident of reading, viewing, listening to, learning from, sharing, improving, and reusing works embodied in digital media."*[84]

Therefore, it would be prudent to revisit the right of reproduction to create a balance between access and incentive under copyright law. The purpose of copyright law is not limited to granting exclusive rights to authors and owners. The public should be provided with access to others' work provided that they are not infringed upon. While discussing Professor Litman's arguments, Alice Lee and Phoebe Woo

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authored" or "computer generated": as the Article has shown, machines (in their current form) are not capable of authorship. These works are authorless because of the lack of any author, not because their authors are machines. Therefore, the existence of a human authorship requirement, often discussed in the literature surrounding computer-enabled works, is irrelevant to the inquiry.").

82 Stahl (n 55).

83 Jessica Litman, 'Revising Copyright Law for the Information Age', *in Digital Copyright* (2 ed. 2006) at 178.

84 ibid.

state, *"…Professor Litman holds the view that the right of reproduction "no longer serves our needs" and that the right of commercial exploitation should become the core of copyright."*.[85] This alters the focus from technical reproductions that amount to non-use to the commercial interests of an author, which is far more relevant in terms of identifying injury to the author over copying.

2.2. Inside and outside the AI Black Box

In addition to intelligence, another crucial difference between AI applications and conventional computer programs is the black box problem. After the AI is trained, it conducts its operations within what is known as a "black box".[86] This is because the learning process of the AI using machine learning algorithms is not observable by the developer.[87] As a result, the developer does not have any visibility on the process used by the AI application to arrive at the output. The developer is possibly afforded the chance to claim that any AI-generated content is an 'independent creation' for which the developer cannot be held responsible.[88] This gives rise to the necessity for determining accountability when AI causes harm,[89] including instances of copyright infringement.

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85 Alice Lee & Phoebe Woo, 'Copyright Law Should Stay True to Itself in the Age of Artificial Intelligence', *in* Ryan Abbott (ed), *Research Handbook on Intellectual Property and Artificial Intelligence* (2022) at 181.

86 Naqvi (n 2) 19.

87 Jarrahi, Lutz, and Newlands (n 35) 4.

88 Naqvi (n 2) 19, 39 and 40.

89 Enrico Bonadio, Plamen Dinev & Luke McDonagh, 'Can Artificial Intelligence Infringe Copyright? Some Reflections', *in* Ryan Abbott ed. *Research Handbook on Intellectual Property and Artificial Intelligence* (2022) at 253.

The black-box problem refers not only to the lack of visibility over the AI's operative process but also the inability to foresee the output of the AI.[90] The non-observable internal processes of an AI application are analogous to the non-observable cognitive processes that are characteristic of human intelligence. Therefore, the opaqueness of the black box factors into the concept of the "intelligence" of AI applications.

Moving beyond the black box, another marker of AI's "intelligence" in comparison to human intelligence is the AI's ability to duplicate the external manifestations of human internal processes.[91] The external manifestations are the directly comparable aspects of an AI tool to human-generated works. As discussed above, the internal structures of humans and artificial intelligence systems are entirely different, with one being neural and the other being silicon-based.[92] Therefore, the internal processes are not comparable. On the other hand, the output of human and artificial intelligence is what can really be scrutinized and contrasted.[93] The similarity in outputs plays a key role in defining the intelligence and, by extension, the autonomy of an AI application.

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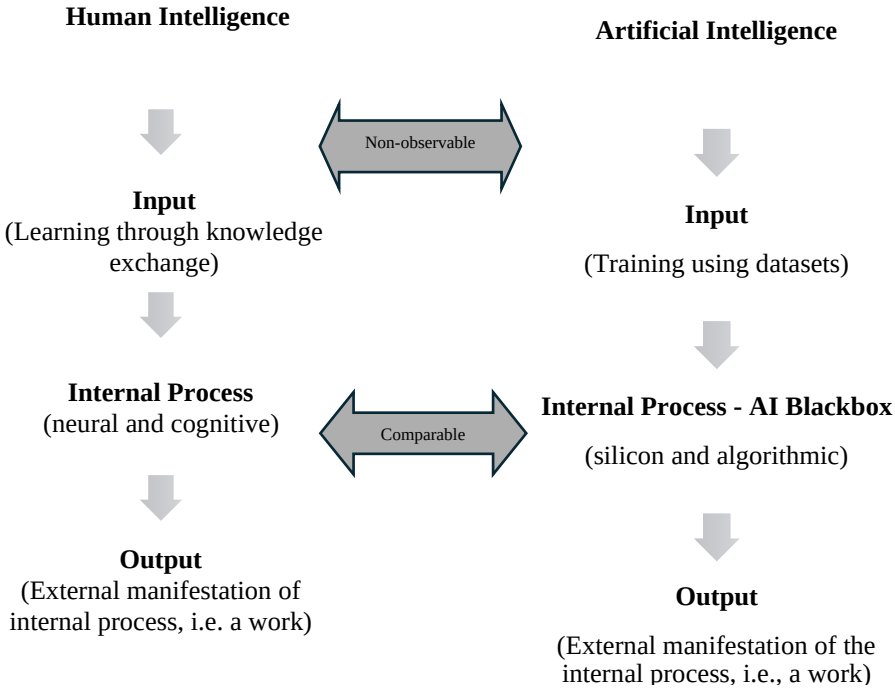
90 Bathaee (n 2) 905.

91 Scherer (n 47) 360.

92 Korteling et al. (n 51).

93 For example, if a human and an AI application are both asked to write a screenplay on the theme of comedy, the internal mechanisms used by each in creating the screenplay are not observable. However, the final product, i.e., the screenplay itself can be compared. Since the AI developer is not involved in the creation of the output, it becomes a comparison of the creation of the human and the artificial intelligence application itself.

Fig 1.: Birds-eye view of the various stages involved in Human and AI



decision-making processes

The figure above demonstrates the understanding that the similarity between human and artificial intelligence can be viewed at the point of output. The external manifestations of the respective internal processes can be compared to determine whether there exists any similarity or whether the outputs are original, provided that the prompts used to obtain the outputs are similar.

We have explored above how the AI developer has a limited role, beyond which AI seems to exercise a certain degree of autonomy, which precludes the developer's involvement or ability to determine the output. The separation of the developer from the AI's output is a crucial aspect within the larger framework of liability for copyright

infringement. Copyright laws recognize that individuals/persons can be held liable for their infringing acts (explored in part 3 below). Although the personhood of AI is contested, we look at whether the 'intelligent' actions of AI (which is silicon-based compared to neural-based human acts) necessitate responsibility. With this backdrop, we examine the imposition of liability and its consequences in relation to AI-generated works.

3. Determining and Ascribing Liability for Copyright Infringement by AI-Generated Works

As demonstrated throughout this paper, AI can possibly be considered as a master of its own external manifestations.[94] This has the potential to result in the creation of outputs that are substantially similar to existing literary, artistic or musical works. Authors are now beginning to detect works created by AI applications that are strikingly similar to the author's own work.[95] Given AI's swift content generation capabilities, the advent of AI-generated works is seen as a threat to the careers and livelihoods of artists and other creators.[96] By creating substantially similar content, the AI tools would be engaging in acts in

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94 Scherer (n 47) 365. (*"…AI systems are not inherently limited by the preconceived notions, rules of thumb, and conventional wisdom upon which most human decision-makers rely, AI systems have the capacity to come up with solutions that humans may not have considered, or that they considered and rejected in favor of more intuitively appealing options.").*

95 Bearne (n 8). (*"Eva Toorenent, an artist creating mostly creature design, monster and fantasy illustrations, says she became concerned about AI after attending a gallery where she was surprised to see a piece of art with similarities to her own - which she describes as a "corrupted version"."*)

96 ibid. *("[Kelly McKernan says:] "I felt violated. If someone can type my name [into an AI tool] to make a book cover and not hire me, that affects my career and so many other people.""").*

respect of the work, the exclusive right of which is held by the author/owner of the work, thereby infringing copyright.

In India, Section 51 of the Copyright Act details instances when copyright is infringed.[97] Section 51(a)(i) refers to acts of copyright infringement done directly by the infringer. Section 51(a)(ii) refers to instances where the infringer allows a third party to use their premises for copyright infringement. In this part of the paper, we examine the applicability of copyright infringement as set out in Section 51(a)(i) to instances of AI-generated works. This is because the term 'any place' in Section 51(a)(ii) has not yet been judicially interpreted in India to include AI tools. The paper will focus on exploring the liability of the developer and AI tool independently which stems from the understanding of 'intelligence' in AI tools in comparison to computer programs.

3.1. DEVELOPER'S LIABILITY

We proceed with the assumption, based on the last two parts of this paper, that AI applications operate with a certain degree of 'intelligence' owing to its autonomous and independent decision-making within its black box. This black box, i.e., the internal process of the AI, is not observable by the developer or the user. Any output that is generated is in response to a prompt by a user. As a result, AI developers are unable to predict or foresee the output of an AI tool.[98]

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97 The Copyright Act (n 70) s 51.

98 Scherer (n 47) 366. *("…even the most careful designers, programmers, and manufacturers will not be able to control or predict what an AI system will experience after it leaves their care. Thus, a learning AI's designers will not be able to foresee how it will act after it is sent out into the world…").*

This makes it challenging to establish a causal link between a programmer's actions and any harm caused by the AI.[99] Therefore, ascribing liability onto the AI programmers is debatable and may even considered as unjust as they are not involved in the generation of the AI's output. However, this places victims of copyright infringement in a precarious position in light of their inability to appropriately target their remedial claims for unauthorized usage of their works.[100]

Control and predictability are key factors for determining the liability of the programmer. However, the increasing sophistication and opaqueness of AI applications impact its predictability. If the programmer is unable to foresee the AI's outputs, attempts to ascribe liability to the programmer would fail.[101] The theoretical arguments discussed in part 2 of this paper highlight how the developer can be excluded from the AI-generated output for various reasons.[102] Adding

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[99] Mohammad Bashayreh, Fadi N. Sibai & Amer Tabbara, 'Artificial Intelligence and Legal Liability: Towards an International Approach of Proportional Liability Based on Risk Sharing', (2021) 30 Information & Communications Technology Law 169, 172. (*"…the involvement of AI systems blurs the concepts of fault and causation because of the way the AI system develops its own behavior with time."*)

[100] Ibid *at 366*. (*"even the most careful designers, programmers, and manufacturers will not be able to control or predict what an AI system will experience after it leaves their care.48 Thus, a learning AI's designers will not be able to foresee how it will act after it is sent out into the world."*).

[101] Bathaee (n 2) 931. *("strict liability only makes sense if the creator of a computer program can anticipate the program's harmful effects ahead of time and adjust the program accordingly. As computer programs become more intelligent and less transparent, not only are the harmful effects less predictable, but their decision-making process may also be unpredictable.").* Since we assume in this paper that humans and AIs are responsible for their own actions, we do not intend to explore the applicability of vicarious liability. In brief, vicarious liability in the context of AI would result in holding the programmer liable for the actions of the AI. In this paper, we examine the extent of liability of the programmer and the AI itself independent of each other and to the extent of their involvement in the infringing output.

[102] Returning to the anthropomorphic interpretation of AI, briefly discussed in part 1 of this paper, the developer adopts a role which is similar to a teacher in an

to this, keeping in mind the definitions of AI explored in part 1, AI is already considered to have *"intelligence and problem-solving that are unmatched by humans in terms of speed and scale"*.[103] Should, then, a victim of copyright infringement bring action for copyright infringement against the AI application itself? What would happen in such circumstances? What would be the remedial consequence of ascribing such liability? These questions are explored below.

3.2. LIABILITY OF ARTIFICIAL INTELLIGENCE – DOES 'INTELLIGENCE' NECESSITATE RESPONSIBILITY?

AI tools have the ability to make decisions which could result in the creation of works that infringe copyright. Given the social impact and consequences of AI-generated content, it is important to consider offsetting AI's ability to create independently with standards of accountability. This would entail initiating action against the AI as a system that can be sued on its own[104] and determining the consequences of ascribing liability onto the AI. Copyright law provides for two types of liability for copyright infringement: civil and criminal. In India, Section 55 of the Copyright Act deals with civil liability, whereas Section 63 provides for criminal liability when the copyright

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educational setting. The use of copyrighted materials by a teacher for educational purposes is protected as fair dealing in India [*See* The Copyright Act (n 70) s 52(1)(i)]. Comparing this to the actions of the developer, Professor Mark Lemley and Brian Casey argue that machine learning training is 'fair learning' when individual copyrighted works are used as this does not amount to copying of copyrightable expression [See Mark A Lemley and Bryan Casey, 'Fair Learning' 99 Texas Law Review 743.].

103 Jarrahi, Lutz, and Newlands (n 35) 2.

104 Emmanuel Salami, 'AI-Generated Works and Copyright Law: Towards a Union of Strange Bedfellows', (2021) 16 Journal of Intellectual Property Law & Practice 124, 130.

in a work is infringed.[105] The enactment of these provisions pre-dates the development of AI technology as we know it today. Therefore, we now look at the applicability and effect of ascribing each type of liability onto an AI application.

3.2.1. Civil Liability of AI

Section 55 of the Copyright Act provides for *'Civil remedies for infringement of copyright'*. Section 55(1) reads as*:*

> (1) Where copyright in any work has been infringed, the owner of the copyright shall, except as otherwise provided by this Act, be entitled to all such remedies by way of **injunction, damages, accounts** and otherwise as are or may be conferred by law for the infringement of a right.[106]

The remedies available to a victim of copyright infringement, as can be discerned from Section 55(1) of the Copyright Act are: injunction, damages and accounts.[107] Civil liability may be ascribed only to a limited extent to an AI application for its independent creations that infringe copyright due to the nature of the different civil remedies. The only seemingly realistic remedy available to an aggrieved author is to seek injunctive relief against further usage of their work by the AI application. Thus, the applicability of civil liability to AI applications is limited to injunctions. The sufficiency of only injunctive relief being

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105 The Copyright Act (n 70) ss 55 and 63.

106 ibid. at s 55.

107 Injunction refers to a court order restraining the infringing party from continuing with the infringing activity. Damages refers to compensation awarded to the aggrieved party for losses suffered due to the infringement. Accounts refers to the financial records that the infringing party must provide, disclosing the profits gained from the infringing activity, which is used to determine the amount that the aggrieved party is entitled to recover.

available for victims is debatable in light of commercial benefits arising from the creation and use of the infringing work by third parties.

An aggrieved individual may not have any remedy in relation to seeking damages against an AI application. Since the concept of money is a human construct[108] and the legal status of AI personhood is ambiguous (unlike, for example, corporate personality), possession and management of money by an AI application remains fiction. If the developer or the user of the AI profit from the infringing work created by the AI application, the only recourse available to the victim is to seek damages from either the developer or the user. However, the developer and user do not directly collaborate for the independent creation of the AI,[109] precluding their accountability for the AI's output. Therefore, it is challenging for a victim of infringement to seek damages from the developer or user for content generated by an AI application. The ambiguity of AI personhood can also impact injunctive relief, although it is the most plausible remedy for victims of infringement. Notwithstanding, a developer's role remains limited, which calls into question any action brought against them for violations committed by AI tools.

3.2.2. Criminal Liability of AI

Criminal remedies against infringement of copyright are provided under Section 63 of the Copyright Act. Section 63 states that any

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[108] See generally Nigel Dodd, *The Social Life of Money* (Princeton University Press, 2014). Dodd discusses the origins and development of money as a social concept among humans.

[109] Ginsburg and Budiardjo (n 4) 434.

person who infringes copyright or any other right under the Copyright Act *"shall be punishable with imprisonment for a term which shall not be less than six months but which may extend to three years and with fine which shall not be less than fifty thousand rupees but which may extend to two lakh rupees"*.[110] Criminal liability for copyright infringement generally encompasses imprisonment and imposition of fines on the infringer[111] as well as seizure of the infringing copies.[112]

Section 63 refers to any '*person'* who infringes or abets the infringement of copyright.[113] For this section to apply, the infringing party needs to be a *'person'*, which does not include AI tools due to their ambiguous legal status regarding personhood. This already obstructs the applicability of criminal liability onto AI for copyright infringement. However, the issue of criminal liability can be examined in the context of the programmer's role in an AI tool. If the programmer does not control the AI's independent actions, the programmer cannot be held accountable. Further, the AI's "autonomy" and "intelligence" as discussed throughout this paper, mean that the AI's internal decision-making process cannot be attributed to the programmer.[114] Thus, can

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110 The Copyright Act (n 70) s 63.

111 ibid.

112 ibid. at s 64. For quick reference, s 64 (1) reads as follows: *("(1) Any police officer, not below the rank of a subinspector, may, if he is satisfied that an offence under section 63 in respect of the infringement of copyright in any work has been, is being, or is likely to be, committed, seize without warrant, all copies of the work, and all plates used for the purposes of making infringing copies of the work, wherever found, and all copies and plates so seized shall, as soon as practicable be produced before a Magistrate.")*.

113 ibid. For quick reference, the initial part of s 63 reads as: "*63. Offence of infringement of copyright or other rights conferred by this Act.— Any person who knowingly infringes or abets the infringement of".*

114 Mohammad Bashayreh, Fadi N. Sibai & Amer Tabbara, 'Artificial Intelligence and Legal Liability: Towards an International Approach of Proportional Liability

an AI tool be held criminally liable for creating works that infringe copyright?

In addition to the exclusion of AI from the term '*person'* used in Section 63, attempts to ascribe *mens rea* onto AI with respect to criminal liability for copyright infringement would fail on two counts. First, intelligence is generally defined in the context of achieving a goal, and this relates to intention and self-awareness. Goals and intentions are metaphysical, which makes it difficult to apply them to AI applications.[115] Second, what would be the consequence of ascribing criminal liability onto an AI application? The assumption drawn through this study of AI's 'intelligence' in relation to its capacity for 'independent' creation raises the question of responsibility for any wrongdoings. However, the imposition of fines and prison sentences on an AI for copyright infringement by AI-generated works would occur in digital oblivion.

Therefore, the apportionment of criminal liability onto AI applications could prove to be very difficult. Any liability to be imposed on an AI tool is limited to civil liability. Even within the contours of civil remedies, aggrieved parties are further limited to seeking injunctive relief against the AI application against further acts of infringement.

Based on Risk Sharing', (2021) 30 Information & Communications Technology Law 169, 179.

115 Scherer (n 47) 361. (*"In common parlance, goal is synonymous with intention.29 Whether and when a machine can have intent is more a metaphysical question than a legal or scientific one, and it is difficult to define goal in a manner that avoids requirements pertaining to intent and self-awareness without creating an over-inclusive definition.30 Consequently, it is not clear how defining AI through the lens of goals could provide a solid working definition of AI for regulatory purposes.").*

3.3. International Developments on AI and Copyright Infringement

In 2024, the European Parliament's 'Report on intellectual property rights for the development of artificial intelligence technologies'[116] included the Committee on Culture and Education's proposal for a distinction between apportionment of liability on AI for instances of autonomous infringement and operators of the AI software facilitating copying of third-party works.[117] Following much deliberation, the European Parliament and the Council approved the Artificial Intelligence Act (2024), which aims to harmonize rules relating to AI.[118] As per the recitals of this Act, anyone who wishes to use a copyrighted work must mandatorily obtain authorization from the rightsholder to make such usage unless there are any exceptions.[119] The introduction

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[116] Stéphane Séjourné, '*Report on Intellectual Property Rights for the Development of Artificial Intelligence Technologies* (2020/2015(INI), European Parliament, 2020) https://www.europarl.europa.eu/doceo/document/A-9-2020-0176_EN.html accessed 14 June 2024. *("…a clear distinction has to be made between autonomous infringements and the copying of third party works that were facilitated or not prevented by the operator of the AI software; states that traceability should be an indispensable condition in allocating responsibility, as it acts both as a basis for legal action and enables the diagnosis and correction of malfunctions;")*

[117] Sabine Verheyen, *Opinion of the Committee on Culture and Education for the Committee on Legal Affairs on Intellectual Property Rights for the Development of Artificial Intelligence Technologies* (European Parliament, 2020) https://www.europarl.europa.eu/doceo/document/A-9-2020-0176_EN.html accessed 22 June 2024. (*"also emphasises the need to address the issue of liability for copyright and other intellectual property infringements by AI systems, as well as the issue of data ownership; stresses, however, that a clear distinction has to be made between autonomous infringements and the copying of third party works that were facilitated or not prevented by the operator of the AI software"*).

[118] Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence (Artificial Intelligence Act) [2024] OJ L 192.

[119] *ibid.* at recital 105. *("…Any use of copyright protected content requires the authorisation of the rightsholder concerned unless relevant copyright exceptions and limitations apply. Directive*

of the AI Act, which went into force on August 1, 2024, demonstrates the EU's efforts towards AI regulation, including aspects related to copyright. The impact of this Act on the AI landscape in the EU, from the perspective of copyright, will be highly influential in shaping global discourse on the subject and, therefore, must be keenly watched.

Contrastingly, in the United States, at present there are no specific laws that address copyright infringement by AI. Recent decisions of US courts[120] and the Copyright Office[121] have explicitly stated that AI cannot be recognized as an author of copyright owing to the lack of human authorship. Extending the position on AI authorship to enforcement complicates ascribing liability to AI tools for copyright infringement by AI-generated content. According to the Congressional Research Service's report on 'Generative Artificial Intelligence and Copyright Law', AI users and AI companies would potentially face liability for copyright infringement based on the principle of vicarious liability.[122] It is yet to be seen how these principles

(EU) 2019/790 introduced exceptions and limitations allowing reproductions and extractions of works or other subject matter, for the purpose of text and data mining, under certain conditions. Under these rules, rightsholders may choose to reserve their rights over their works or other subject matter to prevent text and data mining, unless this is done for the purposes of scientific research. Where the rights to opt out has been expressly reserved in an appropriate manner, providers of general-purpose AI models need to obtain an authorisation from rightsholders if they want to carry out text and data mining over such works."). For a more detailed exploration of TDM exceptions in the context of AI creativity and copyright, see Eleonora Rosati, 'Copyright as an Obstacle or an Enabler? A European Perspective on Text and Data Mining and Its Role in the Development of AI Creativity' (2019) 27 198.

120 *Thaler v Perlmutter* Civil Action 22-1564 (BAH) (D.D.C. 18 August 2023).

121 Robert J Kasunic, *Zarya of the Dawn* (Registration No VAu001480196, United States Copyright Office, 2023) https://www.copyright.gov/docs/zarya-of-the-dawn.pdf accessed 14 May 2024.

122 Christopher T Zirpoli, *Generative Artificial Intelligence and Copyright Law* (Congressional Research Service, 2023)

are applied to infringement disputes. Several cases have been filed in the US against AI companies for copyright infringement.[123] Across these lawsuits, the main grievance of the authors is the unauthorized usage of their copyrighted works for training AI applications. The question of how the courts will deal with the issue of copyright violation in AI training and AI-generated works is still unresolved, as these cases are ongoing.[124]

In India, AI and associated issues are currently not addressed by any existing legislation. The anticipated Digital India law will likely encompass regulations for emerging technologies such as AI.[125] In relation to AI and intellectual property,[126] the term 'computer-generated' is found only once in the Copyright Act under Section

https://crsreports.congress.gov/product/pdf/LSB/LSB10922#:~:text=AI%20programs%20might%20also%20infringe,created%20%E2%80%9Csubstantially%20similar%E2%80%9D%20outputs accessed 14 May 2024.

123 (n 8).

124 (n 11).

125 Saket Surya, *Science & Technology Policy Brief*, 1, (2023), https://prsindia.org/files/policy/Sci_Tech_Brief-Artificial_Intelligence.pdf (last visited Jun 25, 2024); PIB Mumbai, 'MoS Rajeev Chandrasekhar Holds Digital India Dialogues in Mumbai on the Principles of the Digital India Act' (*Press Information Bureau*, 23 May 2023) <https://www.pib.gov.in/www.pib.gov.in/Pressreleaseshare.aspx?PRID=1926711> accessed 25 June 2024.

126 Although this paper does not focus on the AI-authorship discourse under copyright law, it is worth noting that the Indian Copyright Office first granted and subsequently withdrew the copyright registration granted to the AI tool and co-author 'RAGHAV Artificial Intelligence Painting App'. (See Arul George Scaria, *'AI and the Issue of Human-Centricity in Copyright Law'* The Hindu (2023) https://www.thehindu.com/opinion/op-ed/ai-and-the-issue-of-human-centricity-in-copyright-law/article67485772.ece accessed 15 May 2024). Unlike the US Copyright Office [in the case of the registration of 'Zarya of the Dawn', see Kasunic (n 121)], the Indian Copyright Office has not issued any disclosure requirements concerning the involvement of AI in generating works.

2(d)(vi).[127] The Copyright Act does not contain any other provisions that discuss how computer-generated works must be dealt with. Therefore, interpreting works generated by AI (which are different from computers, as discussed in part 1.3) within the limited usage of 'computer-generated' under the Copyright Act may prove insufficient and not be fully applicable. On the subject of AI and its intersection with copyright, the Ministry of Commerce and Industry, of the Government of India, replying to questions raised in the Rajya Sabha, stated, *"the current legal framework under the Patent and Copyright Act is well-equipped to protect Artificial Intelligence generated works and related innovations.*"[128] Therefore, there is no requirement for separate rights to be created in relation to AI-generated works.[129] With respect to remedies, the Ministry said, *"Adequate and effective civil measures and criminal remedies are prescribed under the Copyright Law against any act of infringement or unauthorized use of works, including digital circumvention."*[130] Despite the Ministry's position on this subject, infringement of copyright by AI tools remains a grey area of law in India. This complexity arises from the distinct roles played by the developer, AI, and the user in the creation of AI-generated content. The lack of clarity regarding the liability of each party requires the establishment of a

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127 The Copyright Act (n 69) s 2(d)(vi). (*"in relation to any literary, dramatic, musical or artistic work which is computer-generated, the person who causes the work to be created;"*).

128 'Gov't of India, Ministry of Commerce & Indus., Dep't for Promotion of Indus. & Internal Trade, Rajya Sabha, Unstarred Question No. 845, Answered by Shri Som Prakash, Copyright Infringement by Generative AI (Feb 9, 2024).'

129 ibid.

130 ibid.

framework which addresses copyright infringement by AI-generated works.

4. CHALLENGES, LIMITATIONS AND POTENTIAL CRITICISMS

The questions that arise in relation to AI are endless. It becomes challenging to address all questions given that this is an extremely dynamic and developing technology in contrast to, arguably, static laws that need updation in response to changes in different industries. This includes copyright law and its interaction with AI. As such, we foresee the issues discussed in this paper receiving the following criticisms, which we address briefly below.[131]

First, it may be argued that the developer must be held vicariously liable for the actions and outputs of the AI tool, given that the developer not only creates the AI tool software but also supplies it with training data. Vicarious liability may also be argued by drawing inspiration from corporate vicarious liability. In response, we highlight that the scope of this paper is to discern the feasibility and consequence of ascribing liability to the AI tool itself and counter the issue on two grounds. One, after the developer has trained the AI tool with data, any expression created by the tool (limiting the consideration of this issue to the contours of copyright law) is done by reconfiguring and restructuring the data that it is trained with. This process occurs within the AI black-box, which is not fully transparent to the developer, who also does not have visibility over the contribution of the user of the AI

[131] We note here that the criticisms discussed above in no way constitute an exhaustive list. The issues that go beyond the scope of this paper possibly warrant entirely separate studies to do justice to the depth of each issue.

tool.[132] Two, the output of the AI tool is not solely determined by the training data. It is a combination of the training data, the AI's decision-making, and user prompts. As such, we rely on the 'authorless' argument proposed by Professor Ginsburg and Budiardjo, which posits that content generated by AI is authorless, not because it is generated by a machine, which is presently not considered an author under copyright law. Rather, the lack of collaboration between the developer and the user in AI-generated content results in the absence of an author, leaving the machine up for independent consideration for its content.[133] Therefore, holding the developer vicariously liable for the content created through training, prompts, and the AI black-box is not entirely tenable.

A sub-theme within this criticism could include the financial gain made by the developer pursuant to the deployment of the AI tool, contributing to the developer's liability. We could run into instances where the infringing content is not only created by the AI tool but further used by the user without the knowledge of the developer. Here, a reference to the language of Section 51 of the Copyright Act will indicate that profit alone is not sufficient to establish liability. There must either be direct involvement or knowledge of the infringing activities.[134] Both of these factors are not present in the context of a developer in relation to the output of an AI tool. The developer neither has any visibility over the decision-making of the AI, which results in the output, nor does the developer collaborate with the user of the AI

132 Naqvi (n 2); Bathaee (n 2).
133 Ginsburg and Budiardjo (n 4).
134 The Copyright Act (n 70) s 51.

tool.[135] As such, any commercial gain made by the developer from the use of the AI tool by third parties does not, *prima facie,* imply vicarious liability.

Another sub-theme within the criticism of vicarious liability could include the issue of intermediary liability. There is a marked difference between intermediaries and AI tools. Intermediaries, such as social media intermediaries, merely host content that is uploaded onto their platform by its users without, in any manner, engaging with it. This can include content which infringes copyright. The intermediaries are not directly held liable for merely hosting the content unless they fail to take down the content once it is flagged as infringing.[136] AI tools are capable of engaging with their training data and prompts from users of the tool to generate content. This opens up consideration for accountability when content is generated by AI tools, unlike in the case of intermediaries. As such, the contours of intermediary liability are not applicable to instances of infringement by AI-generated content.

Second, it may be argued that AI-generated content constitutes a work made for hire or a commissioned work. This would mean that the person at whose instance the work is being created will be the owner of the work.[137] In India, the onus is on the user of the AI tool to seek permission from rightsholders prior to using AI-generated output.[138] Further to this understanding, the user will be held liable for infringement in the event they fail to obtain the necessary permission

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135 Naqvi (n 2); Bathaee (n 2); Ginsburg and Budiardjo (n 4).
136 The Information Technology Act, 2000.
137 The Copyright Act (n 70) s 17.
138 Gov't of India (n 129).

to use the work. In contrast, the EU presumes a causal link between the fault of the developer and the AI-generated output, which causes harm to a third party.[139] Neither of these answer the issue of AI accountability for its creations that involve non-collaborative contributions by the developer and the user.[140] To hold either liable when the acts of each are disjointed from the other but a *sin qua non* nonetheless for the generation of content by an AI tool would not be tenable.

Additionally, in response to both criticisms above, there is merit in considering the "quasi-responsibility" argument proposed by Professor Stahl. He argues that in the context of computers, "*the distribution of responsibility is often no longer clear*".[141] He proposes the concept of "quasi-responsibility", whereby a system is regarded as the subject of responsibility onto which the objects of responsibility can be applied directly. This, he argues, can be done independent of the considerations of agency and personhood.[142] By doing so, the focus remains on the consequences of the system's actions, in response to which appropriate sanctions can be developed.

CONCLUSION

The intersection of AI and copyright has given rise to unique issues. Several questions arise, which currently remain unanswered. What

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139 Directive of the European Parliament and of the Council on Adapting Non-Contractual Civil Liability Rules to Artificial Intelligence (AI Liability Directive) COM (2022) 496.

140 Ginsburg and Budiardjo (n 4).

141 Stahl (n 55).

142 ibid.

happens when AI technology is improved to a level where it surpasses human capabilities? What will be the relevance of human involvement in such circumstances? What happens when AI technology becomes sophisticated enough to not require human involvement? Considering these questions in the context of copyright infringement and the widespread use of already existing AI technology, what should legislators do next? If the separation of the developer creates an independent AI, how can legislators shift from liabilities that are person-centric to non-human entities capable of independent action/creation? What are the remedial consequences of doing so?

Keeping aside the ongoing discussions on the personhood of AI, the concept of liability must arise from action emanating from 'intelligence', whether neural or silicon. Although strong AI, which is capable of superseding human intelligence, is not present yet, the operation and usage of existing AI applications have necessitated addressing liability concerns in copyright infringement by AI-generated works. As AI developers and companies are sued by victims of copyright infringement, the dilemma of ascribing liability in such cases will only grow as AI tools become more "intelligent". Courts may be faced with the question of whether the AI tool should be held liable when AI-generated content infringes copyright, as the developers are merely instructors of the tool. The gap between the theoretical exploration of this issue and its practical application introduces significant uncertainty in determining liability for AI-generated copyright infringement.

While introducing new regulations to govern AI, consideration must be given to setting up a suitable framework for holding an AI application accountable for its actions. This can include redefining the concept of liability in a manner that is applicable to an AI application and allows victims of infringement to seek appropriate relief for infringement. Since the AI authorship issue itself remains heavily debated, defining the boundaries of AI liability for copyright infringement may not be entirely possible yet. Continued deliberations on this subject will encourage responsible development and use of AI which will further influence the operation of existing AI and stronger AI in the future.

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DEMANDING GEOGRAPHICAL INDICATION FOR KASHMIRI KALA ZEERA: ANALYZING PRODUCERS' PERSPECTIVES IN KASHMIR, INDIA

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Abstract

Geographical indication (GI) producers are responsible for upholding the integrity and reputation of their products. They must ensure their products meet the standards and characteristics associated with the GI, maintain high-quality production processes, and protect the GI's reputation by preventing misuse or unauthorized use. Producers must also maintain transparency and traceability in their production practices, allowing consumers to verify the authenticity of goods bearing the GI and complying with regulatory requirements. As it is the duty of producers to register and uphold the GI, their perceptions about GIs are crucial. Cumin seed (zeera) is a spice that adds flavour and aroma to many Indian dishes. It is also used for its medicinal properties and as a source of essential oil. This paper explores the perceptions of the producers of Kashmiri Kala Zeera (Bunium persicum Bioss) regarding the GI tag and its potential implication on their livelihood. This study also discusses the producers' opinions about the perceived value of GI and the factors that led them to demand it. These key factors include the product differentiation factors, economic and marketing factors, cultural factors, and

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challenge factors. Using field-based qualitative methods, this study highlights the causes and contexts behind the demand for GI registration of Kala Zeera in Kashmir, India. This paper also focuses on the impact of the geographical indications of Kashmiri Kala Zeera on its value chain. The researcher conducted unstructured interviews and focus group discussions with 100 producers of Kashmiri Kala Zeera to collect primary data. The findings show that the producers' awareness, knowledge, capabilities, and social cohesion are important factors that lead to their demand for GI for Kashmiri Kala Zeera. The results also demonstrate that producers of Kashmiri Kala Zeera perceive positive potential impact of GI on their livelihood and, therefore, have applied for the same.

Keywords: *Intellectual Property; Geographical Indication; Bunium persicum Bioss; Cumin; Kala Zeera; Kashmir; Producer; Demand; Unauthorized Use.*

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1. INTRODUCTION

Many parts of the world's culinary traditions have been greatly influenced by spices. They have cultural and historical value in addition to enhancing food's flavour and fragrance. Spices can be found everywhere, including outer space: in 1982, spices were incorporated into astronaut food for the United States space shuttle program.[1] There

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is also a renewed interest in the health benefits of spices and herbs. Data from 2015 indicates that 5-10% of adults in the United States use botanical supplements such as spices, for health benefits.[2] Spices such as turmeric, cumin, coriander, and cardamom are used in most dishes, and their use varies depending on the region. Spices from different areas provide insights into the diverse customs and histories of their respective places of origin. The spices possess sparkling colours, distinct scents, and intricate flavours that convey stories of past generations and the cultural significance embedded in their cultivation and usage.

In India, spices have been used for thousands of years, and they play a crucial role in the country's culinary traditions. Spices and herbs such as black pepper, cinnamon, turmeric, and cardamom have been used by Indians for thousands of years for both culinary and health purposes. Spices indigenous to India (such as cardamom and turmeric) were cultivated as early as the 8th century BC in the gardens of Babylon.[3] The use of spices in Indian cuisine also has religious significance, and they are used in religious ceremonies and festivals. Traditional spices have a significant impact on the socioeconomic condition of the area and are an essential component of its cultural legacy. These spices often have historical antecedents that are unique

1 Louis E Grivetti, 'Herbs, Spices, and Flavoring Agents: Part 5: Fusion of Herbs and Spices in the 19th-Century and into the 21st-Century North American Culture' (2017) 52(1) Nutrition Today 44.

2 T.C. Clarke and others, 'Trends in the Use of Complementary Health Approaches Among Adults: United States, 2002–2012' (2015) 79 National Health Statistics Reports, National Center for Health Statistics, Hyattsville, MD

3 James A. Duke (ed) *CRC Handbook of Medicinal Spices* (CRC Press 2002).

to specific regions and can be traced back through geographical evidence.

Kashmir, which is situated in the Himalayan Mountain range in India, is known for its diverse culture and history. The predominantly Himalayan Kashmir valley (Vale of Kashmir) is famous for its serene beauty and cultural richness.[4] Kashmir is characterized by unique food recipes, spices, languages, dress, customs, rituals, festivals, and communities. As a clear expression of cultural values, food becomes a central identity marker, defining personality, social class, lifestyles, and relationships, from family, to community, to ethnic groups or nationality, changing through time and place.[5] The spices are so diverse that practically every area specialises in one or more varieties that local producers in other areas will not be able to make. One such spice is a spice in the category of cumin, Kashmiri Kala Zeera (Kashmiri Black Cumin) botanical name *Bunium persicum Bioss*, popularly known as Kashmiri Shahi Zeera ('Shahi' word is derived from the Persian word 'syahi' which means 'Black', from which the Kashmiri Kala Zeera derives its name. Cumin, (*Cuminium cyminium L.*) commonly known as Jeera is popular because of its earthy aroma. Cumin is a spice that belongs to the parsley family (Apiaceae). Cumin is mainly grown as a rabi crop in India, which means it is sown in winter and harvested in

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4 Bhagat Sheetal & Suvidha Khanna 'The Effect of Food Neophobia and Motivation on Ethnic Food Consumption Intention: An Empirical Evidence from Jammu Region' (2021) 14(1) International Journal of Hospitality & Tourism Systems 67.

5 Jean-Jacques Boutaud and Anda Becuț and Angelica Marinescu, 'Food and culture. Cultural patterns and practices related to food in everyday life. Introduction'(2016) 6(1) International Journal of Reviews and Research in Social Sciences 1.

spring. It is widely used in Indian cuisine for its distinctive flavour and aroma. Cumin seeds are also valued for their medicinal properties, as they help in digestion, immunity, and other health issues. India is the largest producer and consumer of cumin in the world, accounting for about 70% of the global production, [6] and 90%of the global consumption. [7]

Kashmiri Kala Zeera is an agricultural produce which grows and is cultivated and harvested in forests, grassy slopes and to some extent in low alpine pastoral lands of Kashmir Valley of Union Territory of Jammu and Kashmir by local farmers. It is a high value herbaceous spice widely used for culinary, flowering, perfumery and carminative purposes as well as for flavouring food and beverages. It is known worldwide for its medicinal value and culinary value. Besides having high medicinal culinary value, Kashmiri Kala Zeera has been associated with traditional Kashmiri Cuisine and represents the rich cultural heritage of Kashmir.

As claimed by the producers, this spice has a unique history of origin, and the given quality, reputation and other characteristics attributable to its geographical origin of Kashmir. The Kashmir Kala Zeera has gained its name over the ages due to its unique qualities such as its dark black color, high aroma, rich essential oils, vitamins and minerals that make it a medicinal substitute for good health, skin and hair; which

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6 Eajaz Ahmad Dar and others, 'Cumin: The Flavour of Indian Cuisines-History, Cultivation and Uses' (2019) 8 Chemical Science Review and Letters 129.

7 Aadhira Anandh, 'Cuminology: Spicy Profits' (*Dollar Business,* March 2016) <https://in.thedollarbusiness.com/magazine/cuminology-spicy-profits/41594> accessed 4 September 2025.

qualities can be found only in the Kashmiri Kala Zeera grown and produced in certain pockets of forests, hilly tracts and slopes of Jammu and Kashmir. Small-scale producers including those affiliated with Kashmiri Kala Zeera, face significant challenges in achieving economies of scale. These challenges stem from high transaction costs and the threat of intermediaries, both of which can reduce the profits that small-scale producers are able to generate. This, in turn, can limit their ability to compete with larger producers and impede their growth prospects. Geographical Indications are indications which identify a good as originating in the territory of a member, or a region or locality in that territory, where a given quality, reputation or other characteristic of the good is essentially attributable to its geographical origin.[8] Geographical indication is a crucial tactic that could help small-scale manufacturers prosper.

Tradition, biodiversity, local knowledge, and the connection between a product and its place of origin are all acknowledged and protected by GI.[9] While Geographical Indication (GI) registration acknowledges and valorises the traditional knowledge, skills, and cultural heritage linked to a product, its legal protection is primarily directed at safeguarding the registered name of the product as an indicator of origin. The knowledge, methods, and cultural practices associated with production are not protected as standalone intellectual property rights;

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8 Agreement on Trade-Related Aspects of Intellectual Property Rights, 1994, (signed 15 April 1994, entered into force 1 January 1995) art 22.1.

9 Vitória Aparecida Cardoso and others, 'The Benefits and Barriers of Geographical Indications to Producers: A Review' (2022) 37 Renewable Agriculture and Food Systems 707.

rather, they receive only indirect protection to the extent that they are embedded in the product specifications and are necessary to maintain the authenticity associated with the GI name. GIs are associated with a particular location. By reconnecting production to the social, cultural, and environmental elements of specific locations, GIs have the ability to set themselves apart from nameless mass- produced items and pave the path for a greater sense of place-based responsibility.[10] According to Bramley,[11] through a qualification process, GIs confer the right of exclusive use to those producers within the demarcated regions who comply with the production practices and maintain particular standards. The creation of commodity chains with strong social and environmental ties or values gives the possibility of increasing the value of local resources and internalising production costs.[12] Consequently, GI may be viewed as a collective differentiation strategy that grows over time, is influenced by the customs and practices of producers, and serves as the foundation for defining a location's reputation.[13]

Thus, the producers associated with Kashmiri Kala Zeera production are demanding the GI tag for their traditional Kala Zeera. Producers' collectives apply for GI certifications, and its members can manufacture the product using standardised processes and an

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10 Elizabeth Barham, 'Towards a Theory of Values-Based Labeling' (2002) 19 Agriculture and Human Values 349.

11 Cerkia Bramley 'A review of the socio-economic impact of geographical indications: considerations for the developing world' (2011) 22 *In WIPO worldwide symposium on geographical indications, WIPO, Lumu, Peru* 1.

12 Jan Douwe Van Der Ploeg and Henk Renting, 'Behind the "Redux": A Rejoinder to David Goodman' (2004) 44 Sociologia Ruralis 234.

13 Vitória Aparecida Cardoso and others, 'The Benefits and Barriers of Geographical Indications to Producers: A Review' (2022) 37 Renewable Agriculture and Food Systems 707.

exclusive, approved name.[14] Geographical indications tend to value the land and its particular agro-ecological characteristics that impart unique organoleptic properties on a product that may be difficult to replicate in other regions or countries.[15] The Director, Department of Agriculture and Farmer's Welfare, Kashmir (J&K)-India has filed an application in 2022 for the registration of GI with the Geographical Indication Registry of India for the registration of Kashmiri Kala Zeera, for and on behalf of the farmers of Kashmiri Kala Zeera in the U.T of J&K, grown/produced/cultivated in prominent pockets of Gurez (Bandipora), Tangdar, Karnah and Machil in District Kupwara, Tral, Khrew (Pulwama), Beerwah, Chrar-i-shareef (Budgam), Paddar (Kishtwar) Dharra, and etc. under Class 30 (Spices) as per the Fourth Schedule of Geographical Indication's Rules, 2002 read with Geographical Indications of Goods (Registration and Protection) Act 1999.[16] The tradition of cultivating Kashmiri Kala Zeera has been passed down from one generation to the next, ensuring that the technicalities in the cultivation of this traditional spice are never lost. However, they are yet to receive the GI tag.

2. THEORETICAL APPROACH

A product's value or reputation could change depending upon the acts of its owners or producers. Producers of origin products are

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[14] Sangeetha K Prathap and Sreelaksmi CC, 'Determinants of Purchase Intention of Traditional Handloom Apparels with Geographical Indication among Indian Consumers' (2022) 4 Journal of Humanities and Applied Social Sciences 21.

[15] Daniele Giovannucci and International Trade Centre (eds), *Guide to Geographical Indications: Linking Products and Their Origins* (International Trade Centre 2010).

[16] Application Details available at https://search.ipindia.gov.in/GIRPublic/Application/Details/922.

responsible for defining, registering, popularising and maintaining the GI registration.[17] Producer perceptions are consistent with what is actually happening in the relevant subsectors. In order to facilitate the successful registration of each origin product as a geographical indicator, policy makers and other enablers should concentrate on the areas of interest indicated by the perceptions. The ecosystem approach to natural resource management would be supported by the regulations that would arise from the protection, improving environmental sustainability.

The theoretical approach outlined in this paper includes: (a) examining producers' awareness, (b) evaluating their knowledge, (c) exploring their capabilities, and (d) considering their social cohesion, all of which contribute to the producers' demand for Geographic Indications (GI). Producers who have a profound understanding of their product, extensive knowledge of their local environment, and significant expertise in their craft, along with strong social cohesion with fellow producers, are more inclined to appreciate the value of Geographical Indications and the positive impact on their products. This awareness encourages them to view GI favourably and to be more open to its benefits, ultimately increasing the demand for GI-labelled products. 31 illustrates how these various elements are integrated into a cohesive theoretical framework. Each component of this framework will now be discussed individually.

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[17] Fredah Wangui Maina and others, 'Producers' Perception of Geographical Indications as a Product Diversification Tool for Agrifood Products in Semi-Arid Regions of Kenya' (2018) 6(2) International Journal of Food and Agricultural Economics 85.

Producers' awareness is crucial for attaining GI status for their products. To qualify for GI status, a product must meet specific eligibility criteria. However, if producers are unaware of these requirements, their products will not achieve GI status. Therefore, it is essential for producers to be knowledgeable about these criteria and take necessary actions to ensure their products meet the qualifications for GI status. Additionally, producers should be aware of the benefits that a GI tag can offer. Under the TRIPS definition, a product is eligible for GI status if it possesses unique features or properties tied to a specific region and has a defined place of origin. Producers must recognize and understand the unique characteristics of their products. As noted by Giovannucci and others,[18] identifying and demonstrating a product's unique, origin-related qualities is the initial step towards achieving GI status. Producers should be able to identify both the natural factors—such as the environment, climate, and geographical setting—that influence their product's quality, as well as the human factors, including cultural heritage, customs, history, local expertise, and specific production and processing methods. Awareness of these elements forms the foundation for a product to obtain GI status.

Being a part of a GI is seen to be a means of improving manufacturing quality and adding value, giving a product a competitive edge by showcasing distinctive qualities derived from its area of origin.[19] Producers need to be aware of the benefits of GI status and the unique

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18 Guide to Geographical Indications (n 6) 232.

19 Pénélope Lamarque and Eric F Lambin, 'The Effectiveness of Marked-Based Instruments to Foster the Conservation of Extensive Land Use: The Case of Geographical Indications in the French Alps' (2015) 42 Land Use Policy 706.

attributes that make their product eligible. This includes understanding the unique history, ingredients (especially important for food items), and innovative production methods that set their products apart. Recognizing these unique qualities can motivate producers to apply for GI status. Additionally, understanding how GI status provides a competitive advantage due to product uniqueness is crucial. Producers should also appreciate the cultural significance of their products and how GI can help protect and preserve indigenous culture and knowledge. Moreover, recognizing the socio-economic benefits that GI status can bring is essential, as this understanding can further motivate producers to pursue it. Producers must comprehend the unique aspects of their products, the competitive edge provided by GI status, its role in cultural preservation, and its socio-economic benefits to be fully motivated to apply for GI recognition. Producers should also recognize the advantages of the GI in establishing a reputation for their products and boosting their business. Globally, it is acknowledged that GIs support sustainable rural development because they assist producers in obtaining premium prices for their goods. Geographical Indications not only ensure fair compensation for producers at every step of the production chain but also play a vital role in amplifying the flow of added value back to these producers. By anchoring the value creation process within the origin region, GIs become catalysts for economic growth, fostering local development and preserving traditional practices. Moreover, they serve as engines for increased output, fostering job creation within communities, and acting as a deterrent to rural migration by providing stable livelihoods and opportunities right at home. Producers stand to gain significantly

from Geographical Indications as they help establish a strong reputation for their products, thus bolstering business prospects. GI certification empowers producers to leverage this reputation as a guarantee of product quality, enhancing consumer trust and confidence. This connection between producers and consumers not only commands higher price premiums but also opens up broader market access, ultimately leading to increased revenues for producers. GIs help limit premium leakage by stopping businesses outside the regulated system from fraudulently using GI labels.[20] Geographical Indications serve as distinctive symbols safeguarding manufacturers' hard-earned reputations from the threats of counterfeiting and imitation.

Producers must demonstrate their ability to preserve the distinctiveness and innovation inherent in their products to qualify for Geographical Indication (GI) status. In today's dynamic market, striking a balance between honoring traditional methods and adapting to changing consumer preferences is crucial for success. This necessitates a blend of flexibility, creativity, and collaboration among producers to meet evolving demands effectively. By pooling resources and expertise, producers can deliver high-quality, tailored products that resonate with consumers. Maintaining consistency in product quality

[20] Adriano Profeta and others, 'Protected Geographical Indications and Designations of Origin: An Overview of the Status Quo and the Development of the Use of Regulation (EC) 510/06 in Europe, With Special Consideration of the German Situation' (2010) 22 Journal of International Food & Agribusiness Marketing 179.

is essential, as highlighted by Marquette and Peiffer,[21] and Bramley,[22] to sustain the integrity of geographical designations. Upholding the rich legacy and traditions associated with their products is paramount, ensuring continued demand for GIs. Thus, the capability of producers stands as a pivotal factor in the successful application and maintenance of GI status.

Social cohesiveness among producers is necessary, and this should manifest itself in group efforts when GI applications are made. The producers should be involved in building shared values, engage in collective work, and face shared challenges. GIs are unique among quality mark and intellectual property protection mechanisms in that they cover producer groups rather than individual companies.[23] When producers unite within a collective organization, their social responsibility takes on added significance. This collective effort fosters greater product consistency, a crucial factor in securing Geographical Indication status. Encouraging all value chain participants to work together to safeguard these attributes would boost ownership and guarantee that producers on the supply end of the chain actively preserve the natural and cultural attributes that contribute to the

21 Heather Marquette and Caryn Peiffer, 'Collective Action and Systematic Corruption' (ECPR Joint Session of Workshops, Workshop 19, University of Warsaw 2015).

22 Cerkia Bramley and Estelle Biénabe and Johann Kirsten, 'The Economics of geographical indications: Towards a conceptual framework for geographical indication research in developing countries' (2009) The Economics of Intellectual Property 109.

23 Angela Tregear and others, 'The Impact of Territorial Product Qualification Processes on the Rural Development Potential of Small-Scale Food Productions' (XI World Congress of Rural Sociology Trondheim, Norway, 2004).

distinctive features of their products.[24] Producers gain economic advantages through cooperative activities by pooling resources and minimizing transaction costs. Furthermore, by establishing geographic boundaries and codes of practice, GIs can help small-scale producers collaborate to prevent dominant downstream companies from introducing new suppliers, particularly cheaper non-member competitors, into the value chain. GIs facilitate collective production and marketing, providing the necessary scale to offset the costs of developing and promoting a unique product image.

3. EMPIRICAL ANALYSIS FROM PAST STUDIES

Previous research indicates that producers' perceptions matter when taking GI into account. Factor analysis was used by Anson and Pavithran,[25] to explain producer views of rice production in India under GI protection. They came to the conclusion that producers' attitudes and perceptions regarding GI protection are important because it is their responsibility to register and maintain the protection. Producer opinions about the quality of their Protected Designation of Origin (PDO) beef were compiled by Barreira and others in 2009.[26] They pointed out that depending on the chain segment and product protection stage, different factors need to be considered when assessing perceptions. Behaviour and attitudes of agri-food producers towards the environment and its management determine whether they

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24 Maria Madalena Barreira and others, 'Quality Perception of PDO Beef Producers' (2009) 10(2) Agricultureal Economics Review 36.

25 CJ Anson and KB Pavithran, 'Pokkali Rice Production under Geographical Indication Protection: The attitude of farmers' (2014) 19 Journal of Intellectual Property Rights 49.

26 Quality Perception of PDO Beef Producers' (n 25).

will engage in decisions that either increase or decrease environment quality.[27] In some instances, awareness and attitudes are necessary steps towards predicting producer decision in adopting an environmentally related component.[28] Following these studies, the important factors that would determine the producers' collective decision-making on whether to register their products as GI were identified using factor analysis. The analysis was used to summarise the farmers' perceptions regarding the economic and non-economic factors of importance to the producers of the identified potential GI products. The assessment is important as it gives an indication of expected results from possible registration including potential influence on incomes, food security and natural resource management.[29]

4. METHODOLOGY

Based on existing literature, this paper explores the perceptions of the producers of Kashmiri Kala Zeera regarding the GI tag and its potential implication on their livelihood. Perceptions of producers are important and have been taken into account in this study because perceived behaviour can influence actions indirectly and, hence, be used to predict the actual decisions the individual would take.[30] The

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27 Robert Gifford and Reuven Sussman, 'Environmental Attitudes' in Susan D Clayton (ed), *The Oxford Handbook of Environmental and Conservation Psychology* (1st edn, Oxford University Press 2012).

28 Kristin Floress and others, 'Toward a Theory of Farmer Conservation Attitudes: Dual Interests and Willingness to Take Action to Protect Water Quality' (2017) 53 Journal of Environmental Psychology 73.

29 Insa Theesfeld, Christian Schleyer and Olivier Aznar, 'The Procedure for Institutional Compatibility Assessment: *Ex-Ante* Policy Assessment from an Institutional Perspective' (2010) 6 Journal of Institutional Economics 377.

30 I Ajzen, *Attitudes, personality and behaviour* (McGraw-Hill Education 2005).

intentions and actions of producers are influenced by their perspectives on the circumstance, their subjective norms, and their sense of their ability to carry out the activity, including their level of control. Since individuals tend to over-report perceptions, use of a 5-point Likert scale questions provided a firm basis for eliciting attitudes and perception data. Using attributes specific to the commodity, we developed questions aimed at eliciting producer perceptions regarding various critical aspects. These include the importance of geographical linkage to the commodity's identity and market appeal, the structure of the market in which they operate, and the influence of policies and institutions on their production and export activities. These questions are designed to gather insights into how producers view the connection between their commodity's origin and its market value, the competitive landscape they navigate, and the effectiveness of regulatory frameworks and support systems in facilitating their access to export markets. The objective of this analysis was to assess whether the profits currently earned by producers are significantly influenced by their perceptions of product uniqueness. Given that producers operate solely on the supply side, their insights also offer an evaluation of the supply chain's effectiveness in marketing their products. This perspective is crucial as it sheds light on how well the supply chain supports the distinctiveness and market appeal of the products from the producers' viewpoint.

4.1 Study Site and Sampling

Kashmiri Kala Zeera generally grows in forests, grassy slopes, and to some extent in low alpine pastoral lands in the states of Himachal

Pradesh, Uttranchal and Jammu, as well as Kashmir.[31] Kashmir-called *'The Paradise on Earth'* is a province of Union Territory of Jammu & Kashmir, and has unique geography and culture. The state of Jammu and Kashmir is situated between $32^0$17`, and $36^0$58' North Latitude and $32^0$26`, and $80^0$30' East Longitude and falls in the great North western range of the Himalayas and is the place where Kashmiri Kala Zeera is predominately cultivated in India. In fact, Kashmir holds the distinction of being the only Kashmiri Kala zeera cultivating regions the world over. Kashmiri Kala zeera is confined to hilly traits of Gurez, Machill, Tangdar, Pulwama, Paddar, Karnah, Karewas of Budgam and Srinagar of Jammu & Kashmir. As per the department of forest estimates for year 1996-97, Kala zeera occupied about 225 hectares of forestland producing about 29 tons of seed spice with Baramulla District leading the table.[32]

The study was conducted in Gurez, Machill, Tangdar, Pulwama, Paddar, Karnah, Karewas of Budgam and Srinagar districts of Kashmir region in Union territory of Jammu & Kashmir. The study sites were selected based on the results of a characterisation study that ranked the product as important and potential GI product. All the sites selected are like a fairy valley nestled in the Himalayas in the extreme north of Kashmir valley, producing innumerable agricultural and medicinal products.

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31 Parvez Sofi, 'Kala Zeera (Bunium Persicum Bioss.): a Kashmirian High Value Crop' (2009) 33 Turkish Journal of Biology 249.

32 'Progress Report of NATP Subproject on Selection of Improved Genotypes and Development of Sustainable Production Systems for Kala Zeera (B. persicum Bioss.)' (2004) Journal of Sher-e-Kashmir University of Agricultural Science & Technology 49.

4.2 DATA COLLECTION

The data for this study was gathered using a qualitative methodology. Using unstructured questionnaires for a qualitative interview allowed for the collection of comprehensive and detailed data on the producers' perceived impact of GI and their demand for it. A number of families are associated with the production and selling of Kashmiri Kala Zeera throughout the year. Simple random sampling was utilised to select producers of Kashmiri Kala Zeera who were demanding the GI tag for their product. The total number of the sample chosen was 100, and they were interviewed. Informed consent was obtained from each participant before the interviews were conducted. Interviews were conducted in Kashmiri and Urdu, audio- recorded and later translated into English for analysis. The number of interviews (100) is high for achieving theoretical saturation of the empirical data.[33] Focus group interviews were conducted with six-eight participants, mainly Kashmiri Kala Zeera shop owners in different districts of Jammu & Kashmir. Focus groups are particularly helpful when used in conjunction with other data collection techniques to provide comprehensive information quickly.[34]

For this paper, the 100 interviews were evaluated using the qualitative content analysis methodology, a sophisticated analytical technique that

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[33] Jacqueline Low, 'A Pragmatic Definition of the Concept of Theoretical Saturation' (2019) 52 Sociological Focus 131.

[34] Manju Gundumogula, 'Importance of Focus Groups in Qualitative Research' (2020) 8(11) The International Journal of Humanities & Social Studies 299.

facilitates processing substantial volumes of textual material.[35] The transcripts were used to code the interview data that was initially available. Following the validation of the codes, the content was recoded iteratively. Deductively derived from the theoretical principles expounded above, coding was organised into five categories (refer to Table 1), which were subsequently reinforced inductively during the second coding round. The first category includes "factors involving uniqueness", which refers to the various unique aspects of Kashmiri Kala Zeera as perceived by the producers, which makes it eligible for the GI tag. "Economic factors" is the second category, referring to the Kashmiri Kala Zeera producers' perceptions about the potential economic impact if they receive the GI tag. The third category involves "marketing factors", which refers to the attitudes of the Kashmiri Kala Zeera producers' regarding the potential implication of GI in promoting their business. "Cultural factors" is the fourth category, which expresses the Kashmiri Kala Zeera producers' attitudes regarding the potential impact of GI as a tool for protecting and preserving cultural knowledge. Last but not least, the final category of "factors involving threats" describes the Kashmiri Kala Zeera producers' perceptions regarding various threats that persist and the possible mitigation of these threats by receiving the GI tag in the future.

In order to ensure coherence between the conceptual framework and the field analysis, the empirical categories were directly derived from

[35] Philipp Mayring, 'Qualitative Inhaltsanalyse – Abgrenzungen, Spielarten, Weiterentwicklungen' (2019) 20(3) Forum Qualitative Sozialforschung (Social Research) 1.

the four theoretical parameters outlined earlier — awareness, knowledge, capabilities, and social cohesion. While the theoretical approach provided the lens for understanding producers' perspectives on GI, the empirical study operationalised these into five observable categories: uniqueness, economic, marketing, cultural, and threat factors. Each empirical category reflects one or more theoretical dimensions. For instance, uniqueness factors capture producers' *awareness* and *knowledge* of the product's distinct territorial attributes; economic and marketing factors are linked to both *capabilities* and *awareness* of market opportunities; cultural factors draw heavily on *knowledge* of traditions and *social cohesion*; and threat factors encompass challenges that can undermine *capabilities* and collective efforts. This mapping ensures that the theoretical constructs guided the data coding, interpretation, and conclusions, creating a clear line of continuity from framework to findings.

Table X presents the mapping between the theoretical parameters and the empirical categories, clarifying how the conceptual framework guided data coding and interpretation.

Mapping Table X: Linking Theoretical Parameters to Empirical Categories

Theoretical Parameter	**Empirical Category**	**Nature of Link**
Awareness	Uniqueness Factors	Awareness of distinct territorial and environmental attributes that justify GI eligibility.
	Economic Factors	Awareness of potential for higher income, premium pricing, and broader markets.
	Marketing Factors	Awareness of branding potential, consumer differentiation, and market segmentation.

Theoretical Parameter	**Empirical Category**	**Nature of Link**
Knowledge	Uniqueness Factors	Technical knowledge of production processes, product history, and origin-linked qualities.
Capabilities	Cultural Factors	Knowledge of traditional practices and their role in product identity.
	Economic Factors	Ability to scale production, maintain quality, and meet market demand.
Social Cohesion	Marketing Factors	Capacity to access markets, promote product, and maintain brand integrity.
	Threat Factors	Capacity to address challenges like counterfeiting and intermediary exploitation.
	Cultural Factors	Collective commitment to preserving heritage and traditional methods.
	Threat Factors	Group action in protecting GI reputation and enforcing standards.

5. RESULTS AND ANALYSIS

5.1 PRODUCER AWARENESS OF PRODUCT UNIQUENESS:

This category reflects both the **awareness** and **knowledge** dimensions of the theoretical framework. It captures how producers recognise and understand the distinct territorial, environmental, and historical characteristics that make Kashmiri Kala Zeera eligible for GI registration.

According to the field interviews, the first reason for the producers to demand the GI tag was the various unique factors associated with cultivation of the Kashmiri Kala Zeera. According to the definition of GI under GI Act, 1999, if a product exhibits characteristics or

attributes that are mostly unique to a certain region and has a specific place of origin, it qualifies for the GI. Therefore, boundaries need to be drawn as these boundaries are set up to assert a unique characteristic, and they are thereafter maintained to preserve the additional value.[36] Setting boundaries creates new kinds of cultural identities, closeness, and social distinction rather than limiting physical space.[37] Kashmiri Kala Zeera qualifies as an *agricultural good* under the GI framework in India, as it is cultivated and harvested by local farmers. It also falls within the sub-category of *foodstuffs*, given its primary use as a spice in culinary applications." It has a unique history of origin that is attributable to the boundaries of the Jammu and Kashmir. In Jammu and Kashmir, the crop species grows mostly in the wild under natural conditions in forests on open hilly grassy slopes, low alpine and table lands mostly across the areas of Gurez, Tulail, Keran, Machil, Tangdar, Kargil, Paddar Kishtwar, Khrew and Chrar-e-Sharief. The plant requires an optimum temperature of 24-27°C and sufficient moisture in the soil.[38] Kashmir Kala Zeera has gained its name over the ages due to its unique qualities such as its dark black color, high aroma, rich essential oils, vitamins and minerals that make it a medicinal substitute for good health, skin and hair; which qualities

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[36] Derya Nizam and Mehmet Fatih Tatari, 'Rural Revitalization through Territorial Distinctiveness: The Use of Geographical Indications in Turkey' (2022) 93 Journal of Rural Studies 144.

[37] Rosemary J Coombe and Nicole Aylwin, 'Bordering Diversity and Desire: Using Intellectual Property to Mark Place-Based Products' (2011) 43 Environment and Planning A: Economy and Space 2027.

[38] DS Kaith, 'Things to Know About Kalazira Seed Production in Dry Temperate Zone' (1979) 5 Seeds and Farm 23.

can be found only in Kashmiri Kala Zeera grown and produced in certain pockets of forests, hilly tracts and slopes of Jammu and Kashmir. The quality, originality, uniqueness, special characteristics and reputation earned by Kashmiri Kala Zeera are attributable to the Geographical Location, Environmental Factors and High Altitude of the area where it is cultivated. The Kashmiri Kala Zeera is grown at an altitude of 1800m to 3500m amsl (Above the Mean Sea Level) in the forests in higher reaches of Jammu & Kashmir, which adds to its uniqueness and differentiates it from other Kala Zeera varieties available in the market world over. Kashmiri Kala Zeera contains essential oils and other volatile aromatic components and can be also utilized in a holistic manner for perfumery, cosmetic industries and as seed spice for culinary purposes. The oil is rich in cuminaldehyde and p-menthadienals, these are the essential oils extracted from seeds and are reported to have noteworthy antioxidative, antibacterial and antifungal activities.[39] Besides, the seeds are also used as remedy for liver complaints, abdominal and colic pains, to cure indigestion, dysentery and as a carminative. Kashmir is the only region in India where black cumin of superior quality is produced because of high altitudinal effect and distinct environmental/geographical conditions.

It is one of the costlier spices grown naturally in the hills of Jammu & Kashmir as it costs Rs.7000/-to l1000/- per Kg. Its tubers are also eaten as vegetable in hilly areas of Jammu & Kashmir. The Kashmiri Kala Zeera also has the distinction of being the purely chemical-free,

[39] Neda Shahsavari and others, 'Antioxidant Activity and Chemical Characterization of Essential Oil of Bunium Persicum' (2008) 63 Plant Foods for Human Nutrition 183.

organic and safest as well as the preferred choice of the consumers. Moreover, the Kashmiri Kala zeera growing areas are surrounded by snow-capped mountains for at least 3-4 months after the winter season is over, which has great impact on climate, especially temperature of that region and it adds to the quality and characteristics of Kashmiri Kala zeera. The high mountain peaks also affect the rainfall, which plays very crucial role in the production, yield and qualities of Kashmiri Kala zeera.

According to Nizam and Tatari, determining how local quality and location are related becomes a strategic tool for adjusting production size and commodity culture, which in turn determines the efficacy and redistributing effects of the GI designations as tools for producing rent. The most observable result of a confluence of different non-human elements (ecology, landscape and climate) and human variables (traditional and cultural behaviours) is a particular local variation of a product. According to the respondents, Kashmiri Kala Zeera in various parts of Jammu and Kashmir requires apart from temperate climatic conditions, field preparation which involves ploughing the land to a depth of 12-15 cm and subsequently 2-3 ploughings with disc harrow stirring plough should be given. To protect the Kashmiri Kala Zeera crop from major seed and soil borne diseases and insect pests, the seeds are heated before sowing in fungicidal solution prepared by dissolving (0.1%) Carbendezim l2% + Mencozeb 63% WP @ 5gm in ten Litre of water and dried in shade up to two hours before sowing. For raising of vegetative propogules from mature seed sowing of seed from 20th October to 30th November @ l6kg/ha along with

application of FYM @ 15 tons/ha and vermicompost l0 q/ha. According to the respondents, cultivators of the Kashmiri Kala Zeera continue to employ age-old traditions to make a unique produce. According to them seed should be sown about 1.0 cm deep to ensure good seedling growth and vigor. The respondents said that pre chilling requirement is necessary for breaking the dormancy of zeera seed (mericarps). Proper fertility management is a key for growing a good Kashmiri Kala Zeera crop for realizing its yield potential. Judicious and balance application of fertilizers is necessary to optimize returns on investment. After the field is ready, tubers weighing more than 2g are planted in October by hand dropping. Tubers once planted at 15 cm depth and proper and position is retained in the field for many years to produce seed yield. Interviews highlighted that the last step i.e., timely harvesting of Kashmiri Kala Zeera has strong association with the quality seed recovery. Any delay in harvesting causes shattering of seeds which results in yield loss upto 2l-25%. The crop is harvested by picking the umbels carefully. Picking is done when plants partially turn yellow; the umbels are recommended for harvesting in the wee hours of the morning if the produce is used for essential oil and also to avoid shattering. Therefore, the producers are demanding the GI status as Kashmiri Kala Zeera has a specific place of origin and essentially exhibits the characteristics that are unique to this region, which the respondents feel will help in the creation of a strong, unique selling proposition.

The producers in the study counties generally perceived their product to be unique. A lower proportion of Kashmiri Kala Zeera producers

(68%) perceived their products to possess unique territorial-based attributes (Figure 2). During focused group discussions, producers in the Kashmiri Kala Zeera growing regions attributed the quality of their products more to individual on-farm management practices than to characteristics of the production region. Taste of final product was the single most common characteristic associated with the product uniqueness cited by at least 80% of respondents in each study area. The source of the uniqueness was attributed mainly to the soil characteristics (57%) and weather (temperature, 17% and rainfall, 19%) for the crop. 7% of the producers of the crop attributed the uniqueness to management of the factories and processing activities (Figure 3).

Approximately 25% of the respondents were aware of some form of free riding on the reputation of their respective products (Figure 2). The characteristics of the marketing channels for each of the products may contribute to producers' perception on free riding. Kashmiri Kala Zeera has clearly defined marketing chains that require attribution of the commodity to a specific factor or society of origin. Free riding is often associated with decreased incomes accruing to the actual producers, as the market quality (hence reputation) is not always assured. Only two respondents among Kashmiri Kala Zeera producers identified traditional or cultural practices as being a source of the uniqueness in the resultant Kashmiri Kala Zeera quality. The producers perceive the sufficient moist land conditions (including optimum temperatures, soil characteristics and rainfall) contribute most to the quality of the Kashmiri Kala Zeera. They also cited field

management as important for product quality and reputation as this kept the farms and zeera disease free.

From the focused group discussion, the producers sell Kashmiri Kala Zeera to traders with no follow-up on where or in what form the Kashmiri Kala Zeera and Kashmiri Kala Zeera products are sold thereafter. In the Kashmiri Kala Zeera production regions, intermediaries were the main buyers of zeera from the region and the producers indicated that the intermediaries combine the zeera from the region with those from other regions in order to sell the latter faster. Due to long distances to markets and lack of collective marketing, the producers were not able to negotiate higher prices for the Kashmiri Kala Zeera. The characteristics of the marketing channels for the different products may contribute to producers' perception on free-riding. Lucatelli cautions that due to information asymmetry and free-riding, potential benefits from GI registration do not always accrue to producers, who are often price takers.[40]

Giovannucci indicate that the first step towards a geographical indication is the ability to identify and establish an existing rationale for unique product that is truly origin-related and differentiated. Although identification for GI registration would require more scientific analysis and characterization to delineate the geographical

[40] Sabrina Lucatelli, 'Appellations of origin and geographical indications in OECD member countries: Economic and legal implications' (Working Party on Agricultural Policies and Markets of the Committee for Agriculture Joint Working Party of the Committee for Agriculture and the Trade Committee, Paris 2000).

region clearly, the results of this study provide a guide towards producers' awareness of the uniqueness of their origin products.

5.2 Producers' Perceptions of Geographical Indication-related Attributes of their Products

A five-point likert scale was used to measure the respondents' perception of the importance of (i) characteristics of the production region; (ii) role of various stakeholders (iii) role of policy and (iv) GI and market/price related variables. The summary of producer perceptions for production region characteristics as well as the role of stakeholders is presented below on a 3-point likert scale. From the analysis, at least 43% of Kashmiri Kala Zeera producers agreed that cultural practices related to Kashmiri Kala Zeera production were important in preservation of the quality of the produce. At least 57% of respondents in the counties perceive that the soils characteristics contribute to the uniqueness of the products. In Kashmir Kala Zeera production, characteristics of the soils, rainfall and temperature patterns were perceived as most important in the quality traits. Producers in the study regions appreciate that current management practices may be detrimental to the success of a GI protection. At least 80% of Kashmiri Kala Zeera producers perceived that involvement of the public extension and the GI Registry office as well as being a member of a producer organisation were important aspects in the success of protecting their products as geographical indications. Analysis of perceptions for Kashmiri Kala Zeera producers showed that importance of policies & rules and importance of administration

& extension office accounted for approximately 15% and14% respectively.

5.3 ECONOMIC FACTORS

Economic factors in this study correspond mainly to **capabilities** and **awareness**. They measure the producers' ability to meet GI-related standards and to leverage awareness of market opportunities for tangible outcomes such as income growth, premium pricing, and employment generation.

"From the interviews, it was gathered that most Kashmiri Kala Zeera–producing families have been engaged in this cultivation for between 70 and 150 years, with the craft being passed down through multiple generations." Most of the families of the respondents have been associated with Kashmiri Kala Zeera since the inception of the zeera. One respondent, who has also a shop, said that he is a fourth-generation producer practicing Kashmiri Kala Zeera cultivation, and it has been passed down in his family since his forefather, Ghulam Mohammad, whom he claimed to be the forebearer of Kashmiri Kala Zeera in Jammu and Kashmir. Half of the Kashmiri Kala Zeera cultivation in Kashmir region are run by third and fourth-generation owners who have heard stories about their fathers, grandfathers and great-grandfathers doing the same thing over the centuries. One respondent took pride in being one of the fourth-generation producers of Kashmiri Kala Zeera and said, *'I am a fourth-generation Kashmiri Kala Zeera cultivator and learned the art, which no other cultivator anywhere else can replicate.'* Another respondent associated with Kashmiri Kala Zeera as a fourth-generation producer said that he could not think of any other

profession other than making Kashmiri Kala Zeera since it has been his family business since the time of inception. Again, when a respondent, a third-generation Kashmiri Kala Zeera producer, was asked what made him run the same business as his father and grandfather, he was found to be saying that he was always keenly interested in this business as Kashmiri Kala Zeera is considered to be the pride of Kashmir and he wants Kashmiri Kala Zeera to be world famous. This will only be possible if the current and coming generations keep the Kashmiri Kala Zeera industry alive by contributing everything in this industry. Therefore, GI becomes necessary for the respondents, as they feel their income will increase if they get the GI, which will result in a large number of families being sustained. All the producers associated with Kashmiri Kala Zeera are fully dependent on this industry. They are demanding the GI tag since they feel it will strengthen the Zeera industry, which will become more organized and will serve as a better source of livelihood for the families associated with it. One of the Kashmiri Kala Zeera producers said that his family is fully dependent on this industry. He himself is a fourth-generation producer associated with this industry and wants his son, who will become a fifth-generation owner, to look after his business. However, he is worried that the original Kashmiri Kala Zeera may lose its charm to duplicate Kashmiri Kala Zeera, which is now being made at various places. High-quality Kashmiri Kala Zeera producers will likely experience unfair pricing competition from low-quality product sellers. Nonetheless, customers are more inclined to develop brand

loyalty and are prepared to spend more on a well-known brand.[41] According to the producers, the GI will aid in developing brand loyalty. Consumers' expectations are met by vendors who exhibit transparency and honesty, which in turn fosters trust in their products.[42] In turn, trust can affect the intention to buy.[43] The respondents feel that the GI tag can bring in this trust. This trust will, in turn, lead the consumers to buy authentic GI tagged Kashmiri Kala Zeera. The consumers will be willing to pay a premium, which will, in turn, lead to a rise in the income of the producers who are fully dependent on this industry.

Field interviews revealed that producers feel GI's most significant impact is in the form of an increase in sales and income. One producer said, *"In today's world, financial stability is crucial. By engaging in the business of Kashmiri Kala Zeera, we aim to earn a substantial income to support our families. Obtaining a Geographical Indication will enable us to capture premium prices and enhance our earnings."* According to Zografos,[44] producers may benefit from higher income flows from their origin-based production processes thanks to GIs, which stop income from being diverted for illicit purposes. Indigenous traditional cultivating and production techniques that are exclusive to specific regions are protected by GI,

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41 Bramley (2009) (n 23).

42 Paul A Pavlou and David Gefen, 'Building Effective Online Marketplaces with Institution-Based Trust' (2004) 15 Information Systems Research 37.

43 Bessie Chong, 'Why Culture Matters for the Formation of Consumer Trust? A Conceptual Study of Barriers for Realizing Real Global Exchange in Hong Kong' (2003) 8 Asia Pacific Management Review.

44 Daphne Zografos, 'Geographical Indications and Socio-Economic Development' (2008) SSRN Electronic Journal <http://www.ssrn.com/abstract=1628534> accessed 4 September 2025.

allowing the producer to benefit from their exclusivity. GIs aid in projecting the product's originality and uniqueness, allowing manufacturers to charge a premium price and acting as a deterrent against counterfeit goods.[45] GIs promote a more equitable value distribution for regional producers and communities in this way. Since GI items are likely to command a premium brand price, they help in income generation and may eventually slow the migration of people to other areas. GI can benefit a region by safeguarding and energising young energy from de-channelising as a whole, in addition to providing jobs and increasing income.[46] "One of the cultivators mentioned, *'The local youth work on my farm. If my income increases due to obtaining GI, I can raise their wages, encouraging them to stay in the area rather than seeking opportunities elsewhere.'*

Interviews revealed that producers view Geographical Indications as a significant tool for creating employment. They believe that GI can benefit their community by channelling the energy of the local youth into productive avenues, providing jobs, and boosting revenue. Additionally, GI offers protection to producers by providing a product certification that ensures and signifies high quality.

The producers feel that if they receive the GI status for Kashmiri Kala Zeera, the reward will come in the form of high demand for their products. This high demand will lead to more production of Kashmiri

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45 Rashmi Aggarwal, Harvinder Singh and Sanjeev Prashar, 'Branding of Geographical Indications in India: A Paradigm to Sustain Its Premium Value' (2014) 56 International Journal of Law and Management 431.

46 Naresh Vats 'Geographical indication-the factors of rural development and strengthening economy', (2016) 21 Journal of Intellectual Property Rights 347.

Kala Zeera and will, in turn, lead to an increase in sales. The sales will lead to more income generation, and the profit margin of the producers will also become high. The producers can employ more workers if the demand for the products increases and the profits are high. From the interviews with the labours in various Kashmiri Kala Zeera agricultural lands, it was gathered that the Kashmiri Kala Zeera industry is very important to them, and they earnestly hope that Kashmiri Kala Zeera gets the GI. This will make Kashmiri Kala Zeera more famous, and the sales will increase, and in turn, their salaries will also increase. It will enable them to provide better support for their family.

5.4 MARKETING FACTORS

Marketing factors draw on both **capabilities** and **awareness**. They encompass the capacity to position Kashmiri Kala Zeera in targeted markets and the recognition of GI branding as a tool for differentiation, consumer trust, and market expansion.

The producers indicated that GI status can help them in business promotion. Now, only very few people are aware of the Kashmiri Kala Zeera. Mostly, the tourists who come to Jammu & Kashmir from various places hear about the Kashmiri Kala Zeera from the local people. The producers complained that Kashmiri Kala Zeera is yet to receive its due recognition. Other GI- tagged spices of Kashmir are very famous, yet the Kashmiri Kala Zeera is deprived of its due publicity. It would be challenging to stop the abuse of Kashmiri Kala Zeera's reputation, wherein Zeera made elsewhere would also be sold under the original brand of Kashmir, harming producers and depriving

the Kashmiri Kala Zeera industry of its premium price without sufficient GI protection in both the domestic and international arenas. According to one respondent, '*Geographical Indications will enhance our business by allowing consumers to distinguish our authentic, GI-tagged products from imitations. This will help combat counterfeit goods in the market. Achieving GI status will establish our business as a leader, ensuring the authenticity and exclusivity of our products.'*

GI provides entry obstacles for producers outside the specified area, segmenting the production market. Institutional obstacles like limiting the participation of producers located within the designated region or not following the specified method of production impose entry barriers that cause monopoly development, as seen in GI supply chains. It is a monopoly that derives its roots from the relationship that gives a product its proprietary right to those who are allowed to use it.[47] The Kashmiri Kala Zeera industry has realised that its continued existence may be in jeopardy without effective marketing and branding of its products. GIs are thought to be able to successfully brand products with their origin and quality, which can increase brand pull and increase demand for the product.[48] Tight enforcement of GI protection policies also significantly aids in the sector's financial recovery by promoting the business.

According to the producers, GI is important from the point of view of consumers. Consumer satisfaction is of utmost importance, and

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47 Bramley (2011) (n 12).

48 Christos Fotopoulos and Athanasios Krystallis, 'Quality Labels as a Marketing Advantage: The Case of the "PDO Zagora" Apples in the Greek Market' (2003) 37 European Journal of Marketing 1350.

producers keep it in mind while selling their products. Product quality is one of the consumer's most important considerations when buying a thing. The challenge of determining the uniqueness of items on the market that compete with comparable products is faced by most consumers. Although they look comparable, the fake goods are of lower quality in contrast to the original products. Because of this, consumers frequently face difficult situations where they cannot tell whether the product is authentic. Thus, GI can provide a solution to the dilemma of consumers regarding buying reputable, high-quality products. Consumers will be ready to premium to achieve authentic products. The GI allows the protection of all parties involved, with the producers being provided with product certification that protects their brand and the consumers receiving information about the product's origin and quality. A printed certification serves as an endorsement from the certifying authority, assisting the buyer in believing that the goods are genuine.[49] According to one respondent, *'We as producers always want to give best to the consumers. The consumers are like God to us. We never want them to be cheated with fake products. GI will ensure they get the authentic Kala Zeera from us.'* One of GI's characteristics is that only approved producers are permitted to use the registered name; using the term in any other way is subject to legal repercussions. From the producer's point of view, advertising goods with the GI mark will reassure consumers about the genuineness of the goods they have purchased. Another producer mentioned that, *'GI certification will*

[49] Nazlida Muhamad and Vai Shiem Leong and Normalisa Md Isa, 'Does the Country of Origin of a Halal Logo Matter? The Case of Packaged Food Purchases' (2017) 27 Review of International Business and Strategy 484.

guarantee our consumers receive the highest quality Kala Zeera. Satisfied consumers will, in turn, bring us satisfaction.' The producers claim that GI certification, which offers authenticity on product qualities and guarantees quality, will aid buyers struggling to get information while purchasing Kashmiri Kala Zeera. One respondent was found saying, *'If consumers perceive Kashmiri Kala Zeera as high-quality, they'll pay more for it.'* This is consistent with work done by Piemkhoontham and Ruenrom,[50] which showed that Thai customers were prepared to pay premium pricing for meat bearing traceability labels as long as the meat was of safe-to-eat quality. The GI label is equivalent to the traceability label in that it offers legalised certification confirming the authenticity of the product.

During the focus group discussions, the producers stated that they believe that obtaining the GI status will contribute to value creation for their product, Kashmiri Kaala Zeera. They are confident that consumers will appreciate the true worth of the product once it has been granted the GI status. This is because consumers will realize that the product has certain social, cultural, and economic significance, and that it has successfully met the criteria for receiving the GI tag. Through its process of value generation, GIs have an additional potential income effect that might result in the capture of a premium.[51] According to a producer, *'We know that GI will lead to the creation of value*

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[50] T Piemkhoontham and G Ruenrom, 'Perception and acceptance towards traceability system in selling meat products' (2010) 32(123) Chulalongkorn Business Review 73.

[51] D Barjolle, B Sylvander and E Thévenod-Mottet, 'Public Policies and Geographical Indications' in E Barham and B Sylvander (eds), *Labels of Origin for Food: Local Development, Global Recognition* (1st edn, CAB International 2011).

of Kashmiri Kaala Zeera, and consumers will be willing to pay more for anything that is valuable to them.' This is proved by several studies done in developed countries regarding value creation through GI. These studies include surveys on readiness to pay, which shows 43 per cent of EU customers are prepared to pay a 10% premium for a product with GI labelling, whereas 8 per cent have said they would be willing to pay a 20% premium.[52] According to Reviron, GI goods from developing nations are frequently marketed in European supermarkets at significant prices. The GI-tagged products also command a premium because of their value in developing countries along with developed countries. This is confirmed in a study where it is shown that for 265 items, urban customers in Vietnam view the site of production as a sign of greater quality, confirming that there is a demand for GI products in developing nations, which might result in higher pricing.[53]

The interviews revealed that demand for Kashmiri Kaala Zeera is also high in urban centres of Jammu and Kashmir. However, the producers feel Kashmiri Kaala Zeera is not getting the recognition it deserves. According to a producer few tourists who come here from urban centres show interest in Kashmiri Kala Zeera. We also send Kashmiri Kala Zeera through intermediaries in the urban centres all across India, but that is very limited. Mostly, local people buy Kashmiri Kala Zeera. We know that Kashmiri Kala Zeera has yet to become a household

52 A. Berenguer, 'Geographical origins in the world' (Worldwide Symposium on Geographical Indications, Lima, 22-24 June 2011).

53 See Bramley (2011) (n 12).

name. Now, only GI can give Kashmiri Kala Zeera its due recognition so that people from various places come to know about it.

The producers feel that receiving the GI tag will lead to more sales in various places outside Jammu and Kashmir. Just like the various GI-tagged products of India, which have become famous after receiving the GI and have market worldwide, Kashmiri Kala Zeera producers also hope that their products will meet the same destiny as other GI-tagged products. Paradoxically, the capacity of GIs to effectively convey locality contributes to increasing demand for products outside the locality. A producer was quoted saying, *'After receiving the GI, the scope for exporting our Kashmiri Kala Zeera outside India will increase. People from America and Europe will come to know and demand our products. GI will make sure the news of Kashmiri Kala Zeera spreads far and wide.'* This is confirmed in a study by Reviron and others,[54] which shows that GI goods from developing nations are frequently marketed in European supermarkets at significant prices.

5.5 Cultural Factors

Cultural factors are rooted in **knowledge** and **social cohesion**. They reflect producers' understanding of the traditional and cultural significance of Kashmiri Kala Zeera and the collective will to safeguard and promote this heritage through GI recognition.

The interviews revealed that producers consider the GI as a tool for the protection and preservation of indigenous culture and knowledge.

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54 S Reviron and E Thevenod-Mottet and N El-Benni, 'Geographical Indications: Creation and Distribution of Economic Value in Developing Countries.' (2009) NCCR Trade Working Papers 30.

GI makes it possible to acknowledge traditional knowledge and enable the holders of that knowledge to profit from its commercialization by elevating the value of products whose production relies on it. As a result, GIs incentivize producers that employ traditional knowledge-based procedures, which in turn promote the continued application and preservation of the related traditional culture.[55] According to a producer, 'Kashmiri Kala Zeera signifies our traditional indigenous culture. This indigenous traditional culture needs to be preserved. We believe that GI will help to preserve our traditional culture and create awareness to protect it.' It should be mentioned that creating GI goods is a significant cultural expression for the associated communities in addition to being an economic endeavour. GIs contribute to the preservation of cultural heritage, which in turn strengthens regional identity and the interconnections that support economic as well as cultural development by allowing communities to continue producing their traditional products rather than seeking out other means of surviving outside of their traditional activities.[56] The continuation of traditional knowledge is safeguarded through the GI's role in enabling people to translate their longstanding, collective, and patrimonial knowledge into livelihood and income.[57]

According to the producers, people need to be aware of the rich cultural heritage associated with Kashmiri Kala Zeera of Jammu and

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55 Bramley (2011) (n 12).

56 ibid.

57 Laurence Bérard and Philippe Marchenay, 'Local Products and Geographical Indications: Taking Account of Local Knowledge and Biodiversity' (2006) 58 International Social Science Journal 109

Kashmir. Culture has been described as the customary beliefs, social forms, and material traits of a racial, religious, or social group; the characteristic features of everyday existence shared by people in place or time since the 19th century.[58] In Kashmir different ethnic communities (Kashmiri, Pahari, and Gujjar) are unique in their cultural expressions.[59] All these communities use different plants and animals for their cultural food dishes. Spices and condiments, commonly called *'Masaale'*, play a very important role in the Kashmiri Culinary Art and Cuisine, especially in the dishes of 'wazwaan'. Success of a meal lies in its appeal to the eyes, nose and then the tongue. Spices and condiments are the main ingredients of the food, provide flavor and aroma. Different spices include pepper, cinnamon, cardamom (green, black), cumin, clove, fennel, garlic, ginger, mint, turmeric, red chilli etc.[60] In Kashmir, cultural occasions like marriages, parties, and festivals (Eid, Holi, Diwali), are celebrated by consuming a wide variety of dishes and Kashmiri Kala Zeera is one of the main ingredients. Kashmiri Kala Zeera is in high demand for various cultural festivals celebrated across Jammu and Kashmir. Marriage ceremonies also increase the sales of Kala Zeera here. According to a producer, *'At weddings, it is a must to have Kashmiri Kala Zeera as the important spice.'* The Kashmiri Kala Zeera industry considers cultural events crucial as they witness a surge in the

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58 Yeong S Tey and others, 'Personal Values Underlying Ethnic Food Choice: Means-End Evidence for Japanese Food' (2018) 5 Journal of Ethnic Foods 33

59 Christopher Snedden, T'he significance of Kashmir and Kashmiri identity in J&K' *in Independent Kashmir: An Incomplete Aspiration* (Manchester University Press 2021)

60 Musheerul Hassan, 'Food and culture: Cultural patterns related to food by indigenous communities in Kashmir – A Western Himalayan region' (2021) 22 Ethnobotany Research and Applications 1

sales of the spices during such occasions, as per the feedback received from the respondents. These events hold immense significance for individuals as they celebrate and cherish their cultural heritage. The aroma of traditional spices in the form of Kashmiri Kala Zeera fills the air as people come together and indulge in the festive spirit. Kashmiri Kala Zeera has been gaining popularity through various channels like newspapers, television, and personal recommendations of those who have savored its unique taste. However, respondents have expressed their concern that even though more and more individuals are getting familiar with the zeera, not many people are aware of the rich cultural heritage that surrounds it. The traditional way of cultivation and the history behind the making of this exquisite produce are still unknown to many, and there is a need to spread awareness about it.

According to a producer, *'Kashmiri Kala Zeera is a symbol of our cultural heritage. Yet, people are unaware of it. We are sure that receiving the GI tag will pave the way for the preservation of our cultural heritage and knowledge.'* The distinctiveness of a particular location is heightened by the excellence and distinctiveness of the products associated with that area or locality. When perceived collectively, these products play a vital role in bolstering the local economy, preserving indigenous knowledge and culture, and promoting the overall cultural and economic sphere. From a different viewpoint, GI elevates the status of the location, which, in turn, elevates the historical legacy of the products. This interplay between the location and its products creates a unique aura that sets them apart, making them truly exceptional and worthy of attention.

The producers feel that the reputation of Jammu and Kashmir will increase, and this place will become famous if Kashmiri Kala Zeera receives a GI tag. The product-quality-place link underlying the protection of a geographical indication will prohibit the transfer of the indication to producers outside the demarcated region. GI acknowledges the cultural value of indigenous knowledge, which supports the growth of communities, associated with it and allows for product differentiation in marketplaces by strengthening the consumer's identification of the product with local producers. It also protects consumers who wish to buy genuine products. So, the people associated with the Kashmiri Kala Zeera industry are aware of the various positive socio-economic impacts associated with GI and, therefore, have applied for the same and are waiting to get the status. They are hopeful that they will get the GI, which will give Kashmiri Kala Zeera the desired level of recognition and increase its attractiveness. This desired level of recognition from GI will also provide other benefits, such as tourism evolving and thriving around the Kashmiri Kala Zeera Industry. Producers feel geographical restrictions on product manufacturing enforced by GI tag and formal acknowledgement of the historical and cultural importance of the product are crucial in establishing tourism sector related to that product. People will come to know about the traditional indigenous knowledge associated with Kashmiri Kala Zeera and the rich cultural heritage associated with it. If this spice is granted GI status, this will help to raise awareness of the delicacy and attract more visitors to the town. The growth of the tourism sector will create new opportunities

for local businesses, which will further enhance the town's cultural heritage and reputation.

5.6 FACTORS INVOLVING THREAT

Threat factors are linked to **capabilities** and **social cohesion**. Addressing risks such as counterfeiting, intermediary exploitation, and reduced market survival depends on both the operational ability to uphold product standards and the strength of collective action among producers.

The field interviews revealed that the regular supply chain of Kashmiri Kala Zeera producers was limited in their geographical ambit, which only caters to some neighbouring districts of Kashmir. Only a few families have developed direct connections to the markets of cities in Jammu and Kashmir. Very few Kashmiri Kala Zeera producers have a direct linkage to the cities inside and outside India. There are primarily two means of long route trading, first, the direct contacts and second, via a number of middlemen. Local transporters acting as intermediaries purchase the items, bear the transportation cost from the village to the urban centres, and get money from the producers who are selling it to them. The middleman usually brings a truck or matador and then takes away all the products to sell it at high prices in urban areas. So, the producers here have a lower profit margin than middlemen. In analysing benefits in the coffee sector, a study by Kaplinsky and Fitter,[61] finds that price premiums are more likely to be captured by

[61] Robert Fitter and Raphael Kaplinsky, *Can an Agricultural 'Commodity' Be de-Commodified and If so, Who Is to Gain?* (Institute of Development Studies 2001).

middlemen and distributors than by the actual producers. To add to all this, the bumpy roads from the village to the highway can cause a lot of damage. All these problems just add to the costs the producers are already incurring. The middlemen sell these items to shop owners in the cities and also make personal sales. Thus, middlemen make a handsome amount of money by acting as intermediaries. The producers feel that intermediaries will continue to exploit the business if they do not receive the GI. With the involvement of middlemen, a stark price difference is noticed at the shops selling Kashmiri Kala Zeera in cities. The structure of current supply chains and the nature of trade agreements may make it impossible for producers to receive advantages like higher profits.[62] The high-quality Kashmiri Kala Zeera items would have been a very lucrative export commodity, but the fact is that they are yet to receive the GI, is creating a barrier. Most producers still have no resources to hire a small truck or van and transport them to the urban centres of Jammu and Kashmir. Just a few of them have the resources to arrange proper packaging materials and transport them directly to the urban centres, where more profit can be achieved. The respondents feel that GI can act as the solution to this problem. By "short-circuiting" industrial supply chains, GIs are said to connect producers and consumers better, providing information (about the place of production, the people involved in the production,

[62] Ruchi Pant, 'Protecting and promoting traditional knowledge in India. What role for geographical indications?'(International Institute for Environment and Development Working Paper, May 2015).

and the methods employed) that allow the true environmental and social costs of production to be accounted for.[63]

From the interviews, it was gathered that the producers feel threatened by the duplicate and fake products that are found in the market. They feel it will reduce their chances of survival in the market. They think that only GI status can put a seal on the authenticity of their products as they are the only ones who maintain particular standards while cultivating the Kashmiri Kala Zeera. According to one producer, *'We have heard from various sources that Kashmiri Kala Zeera is now being sold at different places which are not procured from us. We instantly realise they are fake and duplicate products. The people who are selling counterfeit Zeera are taking our name and selling it as Kashmiri Kala Zeera. However, the sad part is that even after knowing that the market is flooded with duplicate products, we are not able to do anything. Therefore, we are demanding the GI status for Kala Zeera. With some legal protection in the form of GI, we can fight against duplicate products that not only harm us but also deprive the consumers of authentic, high-quality Kala Zeera.'*

Inclusion in GI registry would aid in stopping the dishonest practice of defrauding clients by selling duplicate products of Kashmiri Kala Zeera. According to the respondents, the GI status will ensure that only the Kashmiri Kala Zeera that meets the requirements and techniques listed in the GI registration records is eligible to be branded as Kashmiri Kala Zeera. The GI qualification process transforms the resources that give rise to the product's specific qualities into a

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[63] Terry Marsden and Jo Banks and Gillian Bristow, 'Food Supply Chain Approaches: Exploring Their Role in Rural Development' (2000) 40 Sociologia Ruralis 424.

collective intellectual property.[64] Legal recognition of the collective IP provides an exclusion mechanism that averts usurpation of the product's reputation and helps in maintaining the authenticity of the product. This crucial the role which GIs play in protecting reputation has become increasingly important in recent years, as instances of usurpation and misappropriation of origin-based names have risen significantly. Because of this, the function of GIs as a tool for institutionalising collective reputation has grown in significance in safeguarding the producer's reputation as an asset and protecting consumers by providing information regarding the quality of the products.[65]

6. CONCLUSION

This qualitative study contributes to the theoretical understanding of producers' demand for GI for Kashmiri Kala Zeera in Jammu and Kashmir. The study identifies contextual and directly contributing factors that lead to the demand for GI status by the producers, which are examined within an integrative theoretical framework that considers economic, social, cultural and geographical dimensions. The study draws three key conclusions. Firstly, it establishes that producers must possess awareness, knowledge, capabilities, and social cohesion to pursue GI status. Producers who lack the understanding of the benefits of GI are less likely to apply for it. Secondly, the research concludes that producers of Kashmiri Kala Zeera have the ability to identify the various components that make their products eligible for

64 Angela Tregear (n 24).
65 Sabrina Lucatelli (n 41).

GI status. Lastly, the study finds that producers perceive GI status as an opportunity to elevate their social and economic position. They are confident that it will bring recognition and benefits to their Kashmiri Kala Zeera, which is a significant part of their cultural identity.

However, the study has limitations. Firstly, a definitive quantitative analysis is not possible due to the sample size and heterogeneity of the interview data. Secondly, since the product has yet to receive the GI tag, no comparison can be drawn to understand whether any actual development has occurred after receiving the GI tag as perceived by the producers. It will take further investigation to comprehend this fully.

GI is a crucial consideration for producers as they seek to leverage the potential advantages that they offer. These benefits include increased production, higher returns on investment, improved quality of production, easier access to markets, value creation, brand recognition, ability to command premium prices and profits, reduced transaction costs and information asymmetry, enhanced collaboration, protection against intermediaries, protection against counterfeit products, and safeguarding of indigenous cultural knowledge. In this article, we delve into the various expectations and methods expressed by local producers who are actively involved in GI initiatives. This is a significant departure from most GI research and sets this study apart. It provides a distinctive perspective on the growing importance of GI and its social, cultural, and economic implications from the producers' point of view.

FIGURE 1: THEORETICAL FRAMEWORK OF THE STUDY

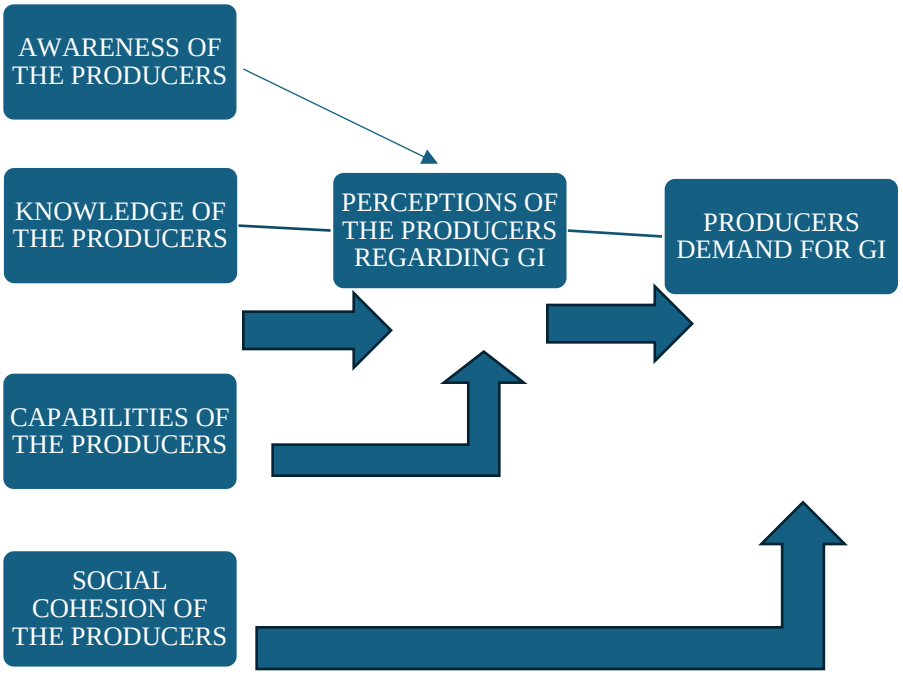

FIGURE 2: PRODUCERS AWARENESS OF THE UNIQUENESS OF THEIR PRODUCT AND FREE RIDING ON REPUTATION

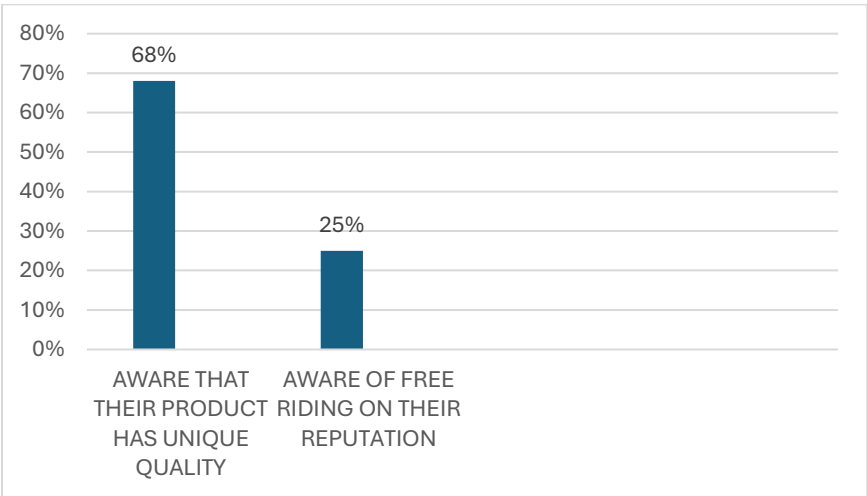

FIGURE 3: PRODUCER PERCEPTIONS ON THE SOURCE OF UNIQUENESS

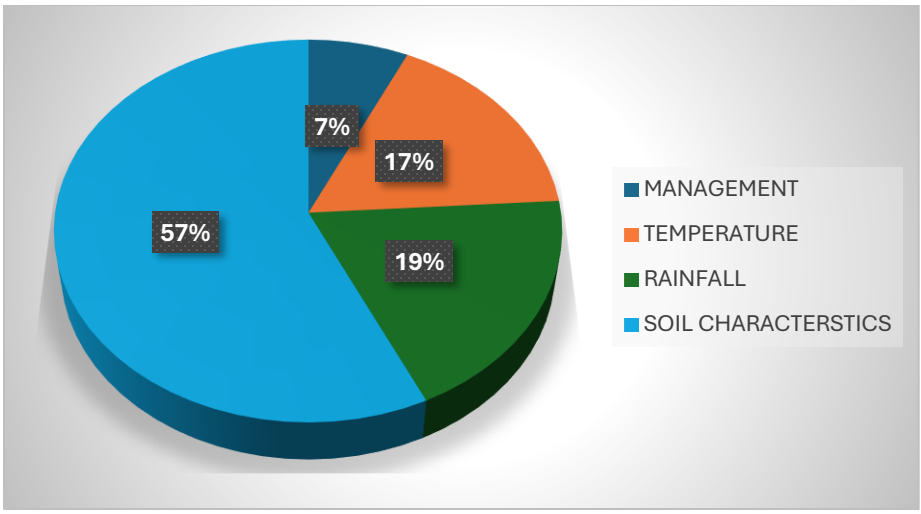

TABLE 1: CODING SCHEMES AND SELECTED PRODUCERS INTERVIEW EXCERPTS

CODING SCHEME CATEGORY	SUB CATEGORIES	EXAMPLE
Factors involving uniqueness	Unique way of Cultivation	*Any delay in harvesting causes shattering of seeds which results in yield loss upto 2l-25%. The crop is harvested by picking the umbels carefully. Picking is done when plants partially turn yellow; the umbels are recommended for harvesting in the wee hours of the morning if the produce is used for essential oil and also to avoid shattering. Producers in the Kashmiri Kala Zeera growing regions attributed the quality of their products more to individual on-farm management practices.*
	Unique Territorial based attributes	*Taste of final product was the single most common characteristic associated with the product uniqueness. The source of the uniqueness was attributed mainly to the soil characteristics and weather (temperature and rainfall) for the crop.*

Economic factors	Generations of family sustained Increased dependence of family Increase in sales and income Employment generation	*Most of the producers belong to the third or fourth generation of families involved in this industry.* *Most of us here are completely dependent on this industry as we do not have alternative employment opportunities* *GI tag will establish our zeera as authentic and therefore demand of the product will increase which in turn will lead to increase in sales and income* *Now I have one worker in my shop. If we get the GI tag, sales and profit will increase and I can employ more workers and thus employment will increase which will prevent rural out migration*
Marketing factors	Business promotion Segmentation of production market Consumer satisfaction Value Creation Scope for export	*People will become more aware about the authenticity of our products if we receive the GI Tag and it will lead to expansion of our business* *GI would present impediments to any producers based outside the UT of Kashmir, making our market monopolistic* *Consumer will be satisfied that they received the GI tagged authentic products* *GI will raise the social, cultural as well as economic value of our product* *Now the sales are limited to only various parts of UT of Jammu and Kashmir which will hopefully spread to more far away areas if we receive the GI tag. Receiving GI tag will also boost the scope for exporting our products in foreign countries*
Cultural factors	Protection and preservation of indigenous culture and knowledge Awareness of rich cultural heritage Increase in reputation	*GI will assist to maintain our traditional culture and raise awareness on how to preserve the traditional knowledge associated with the product* *Zeera is in high demand during various festivities like Eid, Marriages etc., which forms integral part of our culture. GI will make people aware of our rich cultural heritage* *GI will enhance the reputation of the spice and make it synonymous with Kashmir*

	Increase in fame	*GI will make Kashmiri Kala Zeera famous and in turn Kashmir will also get famous*
Factors involving threat	Exploitation in business Reducing chances of survival in market Duplicate and fake entry into markets	*Intermediaries are exploiting our business. The middlemen buys the product from us at lower prices and then sell them at various regional and urban markets at higher prices keeping a nice profit margin* *Most of the profit are taken away by intermediaries which makes it difficult for us to survive in the market.* *We have heard that in various parts of Jammu and Kashmir, Kashmiri Kala Zeera is being sold which is not procured from us. Thus, we can understand they are duplicate products*

15 IJIPL 151-191 (2025)

CONSENT MECHANISM IN ABS GOVERNANCE: CHALLENGES IN ENSURING FAIRNESS AND EQUITY

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Abstract

The modern intellectual property framework, particularly in the context of scientific and technological advancements, often derives its foundation from the galore of knowledge and resources conserved by traditional communities. However, despite their significant contributions, these communities are frequently overlooked in modern scientific discourse, receiving neither due recognition nor equitable benefits. In contemporary scientific practice, it is a well-established norm to attribute and acknowledge sources of information or materials that significantly contribute to the development of an end product. However, such attribution is often absent when it comes to traditional knowledge holders and conservers of genetic resources, whose contributions remain largely unrecognized despite their critical role in fostering innovation. In recognition of this disparity, the Convention on Biological Diversity (CBD) reinforces the principle that fairness and equity should guide the utilization of biological resources and associated knowledge. While this ideal may not always be explicitly stated, the central theme of the CBD is to ensure that the knowledge holders and resource conservers who drive scientific progress are not

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excluded from the benefits arising from the use of their resources and knowledge. In this regard, Prior Informed Consent (PIC) emerges as a critical mechanism for ensuring fairness and equity in the Access and Benefit Sharing (ABS) arrangements. The effectiveness of PIC largely depends on its implementation and enforcement by countries, making it a determining factor in securing fair and equitable benefits for rightful claimants. While the CBD-NP framework establishes broad international principles for ABS, it grants substantial flexibility to member countries in designing their national legal frameworks for PIC. As a result, the practical realization of fairness and equity is contingent upon how PIC provisions are incorporated into domestic legislation. In this context, the key focus of this study is to assess the extent to which the existing legal mechanisms effectively ensure fairness and equity in ABS governance. Accordingly, the article focuses on India as the jurisdiction of analysis, in light of its recent legislative developments, particularly the Biological Diversity (Amendment) Act, 2023, and the Biological Diversity Rules, 2024.

Keywords: *Prior Informed Consent, Access and Benefit Sharing Agreements, Convention on Biological Diversity, Nagoya Protocol.*

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1. INTRODUCTION

The intersection of the intellectual property ("IP") framework and biodiversity governance is currently a subject of intense deliberation at both regional and global levels. Despite the longstanding implementation of the Convention on Biological Diversity ("CBD")

and the Nagoya Protocol ("NP") on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization, challenges persist in addressing IP-driven misappropriation. Their unauthorized exploitation of biological resources and associated traditional knowledge remains a critical issue, particularly for biodiversity-rich countries, which continue to face significant hurdles in safeguarding their Genetic resources ("GRs") and associated traditional knowledge ("ATK"). Against this backdrop, with the World Intellectual Property Organization Treaty on Intellectual Property, Genetic Resources and Associated Traditional Knowledge ("WIPO GRTK Treaty") coming into force, its core mandate of establishing a mandatory disclosure regime is expected to enhance biodiversity governance. While the treaty does not provide for positive protection of GRs and ATK, it will facilitate greater transparency regarding their utilization. This increased availability of information will, in turn, aid biodiversity-related decision making.

Discussions on IP-related misappropriation have been ongoing for over four to five decades, yet a definitive solution remains elusive. However, incremental changes within both the IP framework and biodiversity governance mechanisms have contributed to regulating misappropriation to some extent. In the realm of biodiversity governance, the CBD emerged as a foundational instrument, followed by the NP, which provided further clarity by emphasizing ABS. The CBD serves as the principal international treaty governing global biodiversity regulation, with its core objectives including the sustainable utilization of biodiversity components and the preservation

of biological diversity, and the implementation of Access and Benefit-Sharing ("ABS") mechanisms.[1] To operationalize the ABS objective, the NP was adopted in 2010.[2] Subsequently, national legislations were enacted to operationalize ABS principles, with some, such as India's biodiversity laws, incorporating provisions on the utilization of GRTK in intellectual property systems. On the patent front, disclosure requirements were introduced, and jurisdictions like India explicitly excluded the patenting of traditional knowledge per se.[3] Initiatives such as the Traditional Knowledge Digital Library ("TKDL") have been instrumental in preventing the misappropriation of GRs and ATK by ensuring the disclosure of biological materials used in inventions.[4] Additionally, pre-grant and post-grant opposition mechanisms serve as safeguards against the patenting of mere modifications of GRs/ATK,

1 Convention on Biological Diversity, 'History of the Convention' (*Convention on Biological Diversity*) <https://www.cbd.int/history> accessed 10 August 2024. See also U.N. Conference on Environment and Development, Rio de Janeiro, June 3-14, 1992, *Rio Declaration on Environment and Development*, princ. 22, U.N. Doc. A/CONF.151/6/Rev.1 (14 June 1992).

2 Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from Their Utilization to the Convention on Biological Diversity (adopted 29 October 2010, entered into force 12 October 2014) 3008 UNTS 3 (Nagoya Protocol) art 15. See also Conference of the Parties (COP) 10, 'Decision X/1: Strategic Plan for Biodiversity 2011–2020' (2010) <https://www.cbd.int/cop10> accessed 23 October 2024.

3 The Patents Act 1970, No 39 of 1970 (India), s 3(p).

4 Traditional Knowledge Digital Library, 'Representative Database of Ayurvedic, Unani, Siddha and Sowarigpa Formulations' <https://www.tkdl.res.in/tkdl/langdefault/common/Home.asp?GL=Eng> accessed 24 April 2025 See also Mohd Shoaib Ansari, "Role of Traditional Knowledge Digital Library (TKDL) in Preservation and Protection of Indigenous Medicinal Knowledge of India" in S Sen and R Chakraborty (eds), *Herbal Medicine in India* (Springer Nature Singapore, 2020) 609.

thereby preserving the novelty standard and maintaining the quality and integrity of the patent system.[5]

Although the patent system does not provide positive protection for traditional knowledge, certain measures incorporated within the IP framework contribute to mitigating misappropriation. However, within the biodiversity governance framework, facets of positive protection can be observed. The fundamental objective of biodiversity governance is to guarantee that communities that have preserved and passed down traditional knowledge through generations receive a just and fair share of the benefits derived from its use. Ensuring benefit-sharing in this context means that fairness and equity in utilization must be safeguarded. *Fairness* and *equity* are the cornerstones of biodiversity governance, and efforts to counter misappropriation and to uphold these principles in biodiversity governance is essential to integrate knowledge-holding communities into the broader regulatory framework. The mechanism that facilitates such an inclusive and participatory dynamic is Prior Informed Consent ("PIC"), as provided in the NP, which ensures that traditional knowledge holders have a say in how their knowledge and associated genetic resources are accessed and utilized. Moreover, India has emerged as a global leader in biodiversity governance, implementing robust legal measures through its biodiversity laws while also integrating relevant safeguards within its patent governance framework.[6] Given recent international legal

5 The Patents Act, 1970 (Act No. 39 of 1970), ss 25(1)(j) and 64(1)(p).

6 R K Sinha, 'Biodiversity Conservation through Faith and Tradition in India: Some Case Studies' (2009) 13 International Journal of Environmental Studies

developments, this study critically examines how far the tenets of fairness and equity are ensured in India's national legislation and evaluates the effectiveness of its legal framework in safeguarding GRs/ATK.

Both the CBD and NP emphasize PIC as a fundamental requirement for regulating access to GRs and ATK.[7] The underlying rationale of the ABS laws signifies that a user, while accessing the GRs/ATK originating from the provider country or obtained by a party in conformity with the convention, has to comply with the access regulation put forth by the provider country.[8] The CBD-NP framework stipulates that access to resources must be based on 'mutually agreed terms' ("MAT") and should include the principle of 'prior informed consent' from the resource provider.[9] Furthermore, it acknowledges a duty to guarantee a 'fair and equitable' distribution of benefits derived from the *access* and *utilisation* of resources. Hence, at the heart of access regulation lies the concept of PIC and MAT. The ABS rules *may* include a PIC obligating users to seek consent from GRs/TK providers before accessing the bioresources. Meanwhile,

278, 284, <https://doi.org/10.1080/13504509509469908> accessed 12 August 2024.

7 Convention on Biological Diversity, (adopted 5 June 1992) 1760 UNTS 69 (CBD) art 15, 8(j); Nagoya Protocol, arts 6, 7.

8 Nagoya Protocol, arts 15, 16; see (n 2).

9 Convention on Biological Diversity, 'Frequently Asked Questions on Access and Benefit-Sharing (ABS) <https://www.cbd.int/doc/programmes/abs/factsheets/abs-factsheet-faqs-en.pdf> accessed 12 August 2024; Secretariat of the Convention on Biological Diversity, *Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization* (CBD Decision VI/24, adopted 7 April 2002) <https://www.cbd.int/doc/publications/cbd-bonn-gdls-en.pdf> accessed 12 August 2024.

MAT is a private contract concluded between the user and the resource provider elucidating the terms and conditions governing access to the resources and the distribution of benefits derived from their utilization, which has to be secured by the user ideally.[10]

PIC acts as a critical legal safeguard, ensuring that access to GRs and ATK is lawfully obtained. The procedures for securing PIC are primarily governed by national legislation, with each country formulating its own protocols based on its legal framework and geopolitical considerations. However, the power to secure and communicate PIC can be delegated to non-governmental bodies such as public databases, research institutions, and research funding agencies. The structure of PIC mechanisms varies significantly across jurisdictions. Countries that recognize the *self-determination* rights of Indigenous Peoples and Local Communities ("IPLCs") generally implement more robust and transparent PIC procedures, granting IPLCs a decisive role in the approval process.[11] In contrast, where such rights are not acknowledged, PIC regulations tend to be less defined, with the national government retaining exclusive authority over granting access. PIC serves a crucial function in preventing the unauthorized exploitation of GRs and ATK by ensuring that access is legally sanctioned. From the perspective of IPLCs, who are the

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[10] Dr Burcu Kilic, *Background Note for the International Conference on TRIPS-CBD Linkage: Issues and Way Forward – Implementation of the Nagoya Protocol: Scenarios for Access and Benefit Sharing* (CWS/WP/200/48, Centre for WTO Studies, 2018) <http://dx.doi.org/10.2139/ssrn.5054868> accessed 12 August 2024.

[11] *G.A. Third Comm.*, 68th Sess., 40th mtg., *Self-Determination Integral to Basic Human Rights, Fundamental Freedoms, Third Committee Told as It Concludes General Discussion*, UN Doc. GA/SHC/4085 (5 November 2013) <https://press.un.org/en/2013/gashc4085.doc.htm> accessed 12 August 2024.

traditional custodians of these resources, any access without their informed consent amounts to *misappropriation*. Accurate documentation of PIC can greatly aid in resource tracking, as information would remain attached to bio-resources throughout stages such as research, development, innovation, pre-commercialization and commercialization. Failure to enforce PIC effectively undermines the obligations set forth in the CBD and NP, ultimately weakening their overarching goal of ensuring fair, equitable and sustainable biodiversity governance.

The attempt through this study is to assess the effectiveness of existing PIC mechanisms as mandated by the CBD-NP framework and evaluate the practical feasibility for countries to implement them through their national legislation in the true and real sense as mandated by the international biodiversity governance framework.

2. CONSENT MECHANISM ENVISAGED UNDER THE INTERNATIONAL ABS FRAMEWORK

A multitude of international instruments address GRs and related ATK, while the governance of GRs/ATK encompasses a complex legal framework that intersects with IP, environmental conservation, food security, health, and marine resources. From an IP standpoint, key international instruments include the WTO TRIPS Agreement, which obligates minimum standard of protection for intellectual property across the member states and the UPOV Convention, which protects new plant varieties by securing breeders right through plant

patents.[12] The recent WIPO GRTK Treaty, resulting from negotiations at the Intergovernmental Committee ("IGC") on Genetic Resources and Traditional Knowledge and TRIPS-related deliberations, further shapes this landscape.[13] Conversely, environmental concerns have led to frameworks like the CBD and NP, emphasizing access and fair distribution of benefits sharing from the sustainable utilization of GRs. Specialized ABS frameworks like the UNFAO Plant Treaty address plant genetic resources, while public health crises have led to mechanisms for ABS in vaccine development using virus samples.[14] The exploration of marine genetic resources ("MGRs") in areas beyond national jurisdiction ("ABNJ") integrates the law of the sea into GR governance. Additionally, advancements in synthetic biology have introduced new complexities to global discussions.[15]

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[12] Agreement on Trade-Related Aspects of Intellectual Property Rights (adopted 15 April 1994) 1869 UNTS 299.

[13] WIPO Treaty on Intellectual Property, Genetic Resources, and Associated Traditional Knowledge, UN Doc GRATK/DC/7 (24 May 2024) adopted by Diplomatic Conference to Conclude an International Legal Instrument Relating to Intellectual Property, Genetic Resources and Traditional Knowledge Associated with Genetic Resources <https://www.wipo.int/edocs/mdocs/tk/en/gratk_dc/gratk_dc_7.pdf> (accessed 24 August 2024) (hereinafter WIPO GRTK Treaty).

[14] International Treaty on Plant Genetic Resources for Food and Agriculture (adopted 3 November 2001, entered into force 29 June 2004) 2400 UNTS 303.

[15] The advancements in the field of synthetic biology have led to the increased access and use of Digital Sequence Information (DSI) worldwide, as a result, various international treaty frameworks such as CBD, ITPGRFA, BBNJ and the WHO Pandemic Treaty are adopting measures to secure access and benefit-sharing (ABS) from the use of DSI. See also, Chetali Rao and KM Gopakumar, 'Exclusion of DSI Undermines the Effectiveness of WIPO's Proposed International Legal Instrument Relating to Intellectual Property, Genetic Resources and Traditional Knowledge' (*Third World Network*, 21 May 2024) <https://www.twn.my/announcement/WIPO%20IGC%20-%20DSI%20%20working%20document_21052024.pdf> accessed 21 April 2025; Conference of the Parties to the Convention on Biological Diversity,

The United Nations Declaration on the Rights of Indigenous Peoples ("UNDRIP"), adopted in 2007 by the General Assembly, aims to secure the rights and freedoms of IPLCs.[16] The declaration's concept of equality aligns with a coherent ABS regime while recognizing the ownership and rights associated with traditional knowledge.[17]

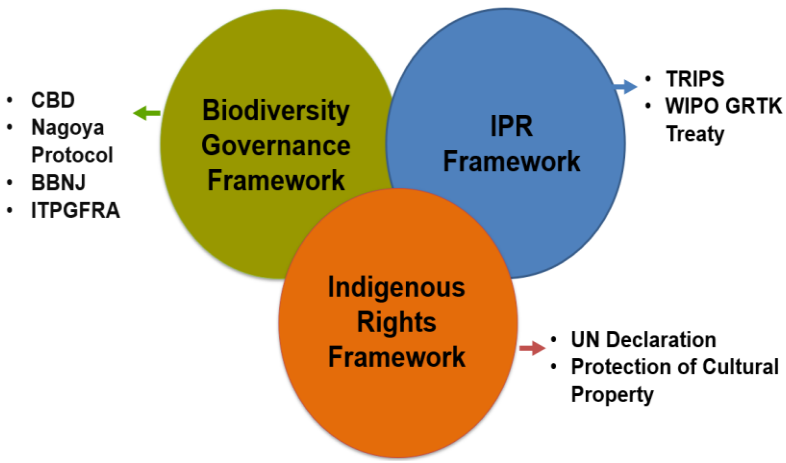

Figure 1: International instruments dealing with GRs/TK, prepared by the authors.

"Digital Sequence Information on Genetic Resources: Draft Decision Submitted by the President" CBD/COP/16/L.32/Rev.1 (1 November 2024) <https://www.cbd.int/doc/c/bd4f/2861/9dce4f46d43a637231a442e0/cop-16-l-32-rev1-en.pdf> accessed 21 April 2025.

16 Angel H Syiem, 'The United Nations Declaration on The Rights of Indigenous Peoples vis-a-vis The Sixth Schedule of The Constitution of India: A Study on Tribal Right to Self-Governance' (2020) 1 Indraprastha Law Review 1 <https://indraprasthalawreview.in/wp-content/uploads/2021/09/GGSIPU_USLLS_ILR_2020_V1-I2-02-Angel_H_Syiem-1.pdf> accessed 21 August 2025.

17 United Nations Declaration on the Rights of Indigenous Peoples, G.A. Res 61/295, U.N. Doc A/RES/61/295 (13 September 2007) <https://www.un.org/development/desa/indigenouspeoples/wp-content/uploads/sites/19/2018/11/UNDRIP_E_web.pdf.> accessed 24 August 2024.

The discussion surrounding PIC will be focused on the CBD and NP frameworks, as consent is at the heart of access regulation promulgated by these environmental treaties. Prior to the convention, bioresources were part of a larger common, widely recognised as the "common heritage of mankind". However, the CBD affirms that states hold sovereign rights over their natural resources. Under Article 15.5, access to genetic resources is conditional upon obtaining the prior informed consent of the supplying party, unless that party decides otherwise.[18]

This establishes a mandatory requirement for parties seeking entry to or acquisition of GRs to secure consent unless explicitly waived by the respective state. On the other hand, Article 8(j) of the CBD encourages nations to support the expanded utilization of ATK, provided that the knowledge-holding communities give their approval and involvement.[19] Additionally, it calls for the just and balanced distribution of benefits derived from the use of such knowledge with the respective IPLCs. However, the language of Article 8(j) is largely aspirational rather than legally binding. While the CBD acknowledges the need for IPLC consultation when accessing TK, it remains silent on its role when biological resources under its stewardship are accessed. Consequently, the CBD leaves it to states to develop their own PIC frameworks for regulating access to GRs/ATK. The NP refines the PIC mechanism by introducing a two-tiered approach, one for access to GRs and another for access to ATK. In the former case,

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18 CBD (n7) 15.5.

19 ibid art 8(j).

the NP mandates obtaining PIC from the government of the provider country, along with the "prior informed consent or approval and involvement" of IPLCs if they possess a recognized authority to permit use of GRs held by them.[20] In the latter case, the Protocol explicitly requires the *prior informed consent or approval and involvement of IPLCs* for access to their ATK.[21]

A close reading of these provisions highlights a critical distinction: while the sovereign authority of states is emphasized when granting access to genetic resources, likewise IPLCs' custodianship over TK is explicitly recognized while accessing the knowledge. This distinction arises from the principle that PIC granted by the national government is justified by state sovereignty over biological resources, whereas community PIC from IPLCs is rooted in their rights to self-determination and cultural identity as recognized under international covenants. Furthermore, the preamble of the NP reaffirms the intrinsic connection between IPLCs and their traditional knowledge, emphasizing their role as custodians through a fiduciary stewardship relationship.[22] Notably, the NP does not impose a mandatory PIC requirement from the community for accessing traditional knowledge that is ex-situ, such as TK documented in public repositories,

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20 Nagoya Protocol (n2) art.

21 ibid art 7.

22 Elisa Morgera, Elsa Tsioumani and Matthias Buck, 'Article 7. Access to Traditional Knowledge Associated with Genetic Resources' in *Unraveling the Nagoya Protocol: A Commentary on the Nagoya Protocol on Access and Benefit-sharing to the Convention on Biological Diversity* (Brill 2015)

publications, libraries, or databases that no longer remain under community control.[23]

In contrast to the CBD, the NP imposes a legally binding obligation on state parties to establish domestic measures ensuring that access to traditional knowledge is conditioned upon prior informed consent or approval and involvement of IPLCs. Article 7 of the NP requires states to develop a PIC framework that grants IPLCs authority to determine access to their traditional knowledge, distinguishing it from the CBD, which primarily entrusts states with regulatory discretion over GRs and ATK. However, the extent to which states implement this PIC requirement depends on their national legal frameworks, allowing them flexibility in adapting the consent mechanism to their specific socio-legal contexts. While this adaptability enables tailored approaches, it also raises concerns about the consistency and effectiveness of traditional knowledge protection under the NP. One major challenge is the varying degrees of legal recognition afforded to IPLCs worldwide. In some jurisdictions, IPLCs are granted distinct legal rights due to their Indigenous status, whereas in others, they are not recognized separately from the general population. Nevertheless, a key issue in the mandate requiring IPLCs to grant PIC is whether this authority effectively grants them the status of state entities or simply acknowledges their right to govern access to their traditional knowledge. It is true that the IPLCs would be successfully able to

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[23] Graham Dutfield, "Chapter 4: Protecting the Rights of Indigenous Peoples: Can Prior Informed Consent Help?" in R Wynberg et al. (eds), *Indigenous Peoples, Consent and Benefit Sharing: Lessons from the San-Hoodia Case* (Springer Science+Business Media 2009).

materialize their self-determination right, a firmly recognised norm under international law, by expressly granting consent or veto over their resources. But it does not necessarily translate into full sovereign authority. Instead, it may signify a form of enhanced autonomy within the broader legal framework of the state. This distinction is critical in assessing whether PIC mechanisms reaffirm IPLCs role in governance or challenge traditional notions of sovereignty.[24]

In most legal frameworks, the PIC mechanism under national ABS laws remains within the jurisdiction of government institutions and is not entirely removed from state control. Therefore, even when IPLCs exercise the power to grant or withhold consent regarding access to their traditional knowledge, it is typically within a broader governmental framework. An example of this variation is India's legal stance on Indigenous identity. Historically, India has maintained that the term "Indigenous" does not apply within its legal framework.

At a 1993 meeting of a United Nations expert group, the Indian delegation argued that since the entire population of India has ancestral ties to its land, drawing a distinction among Indigenous and non-Indigenous groups would create a contrived categorisation.[25] This

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[24] Vine Deloria Jr, 'Self-Determination and the Concept of Sovereignty' in John R Wunder (ed), *Native American Sovereignty* (Routledge 2004) 107.

[25] United Nations, *Report of the Informal Inter-Agency Working Group*, 11th Meeting of Experts on the United Nations Programme in Public Administration and Finance, Geneva, 6–14 October 1993, UN Doc ST/SG/AC.6/1993/L.4 (5 October 1993) <https://digitallibrary.un.org/record/181032?ln=en&v=pdf#files> accessed 21 October 2024; Alpa Shah, "The Dark Side of Indigeneity?: Indigenous People, Rights and Development in India" (2007) 5 *History Compass* 1090 <https://doi.org/10.1111/j.1478-0542.2007.00471.x> accessed 21 October 2024.

perspective significantly influences India's approach to PIC implementation under the Nagoya Protocol and its broader interpretation of traditional knowledge governance. A compelling example can be found in the biodiversity laws of Bhutan, a small landlocked nation in the Himalayas, which exemplifies a progressive enactment of the PIC mandate within the CBD-NP framework through its Biodiversity Legislation. Bhutan's biodiversity governance regime is based on the Biodiversity Act of Bhutan 2022 and Biodiversity Rules and Regulations 2023.[26] The 2022 Act was enacted, repealing the Biodiversity Act of 2003.[27] The 2003 legislation explicitly empowered IPLCs to grant or deny consent when users sought access to their traditional knowledge.[28] According to the provisions of the 2003 legislation, the PIC framework operates through a two-tier mechanism: first, users must obtain consent from the IPLCs, and only then can they approach the competent national authority (government institution) for further approval.[29] Although this is consistent with the mandate of Article 7 of the NP, the legislation remains ambiguous on key issues, including the identification of the community empowered to provide consent, the determination of traditional knowledge

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[26] Biodiversity Act of Bhutan 2022 <https://nbc.gov.bt/news/biodiversity-act-of-bhutan-2022/> accessed 21 October 2024; Biodiversity Rules and Regulations 2023 (Bhutan) https://nbc.gov.bt/wp-content/uploads/2023/03/Biodiversity-Rules-and-Regulations-booklet-design_compressed-1-2.pdf accessed 21 October 2024.

[27] Biodiversity Act of Bhutan 2003 (Bhutan) <https://oag.gov.bt/wp-content/uploads/2010/05/Biodiversity-Act-of-Bhutan-2003_English_.pdf> accessed 24 April 2025.

[28] ibid s37.

[29] Christian Prip and Charlotte van"t Klooster, *The Nagoya Protocol on Access to Genetic Resources and Benefit Sharing: User-Country Measures and Implementation in India*, FNI Report 2/2016, 19–20.

ownership, and the question of whether an individual may claim and permit access to such knowledge under the provisions of the Act.

The 2022 legislation brings much-needed clarity to key issues by explicitly defining the providers of traditional knowledge. It establishes that a community shall be recognized as the provider of ATK within its domain unless the community acknowledges a specific individual as the legitimate custodian of that knowledge.[30] Additionally, if traditional knowledge is held by multiple communities, the Competent National authorities ("CNA")[31], upon the recommendation of the NFP[32], has the authority to engage any of these communities as the designated provider.[33]

The Act further revises the PIC framework, describing it as a procedure whereby the NFP obtains approval from the sources of GRs or custodians of ATK.[34] This marks a significant shift from the 2003 legislation, which mandated that users seeking access to GRs/ATK directly obtain consent from the IPLCs before obtaining government approval. In contrast, under the 2022 framework, it is the National Focal Point and not the users who are responsible for securing PIC from the knowledge providers as prescribed by the

30 Biodiversity Act 2003 (Bhutan), (n27) s 110.

31 See Nagoya Protocol (n2) art 13; ABS Clearing-House, *Step-by-Step Guide: Publishing Competent National Authorities (CNA)* <https://www.cbd.int/abs/en/guides/cna.pdf> accessed 21 April 2025. Art 13 requires Parties to designate a National Focal Point (NFP) for ABS and one or more Competent National Authorities (CNAs), while art 14 mandates publishing CNA information in the ABS Clearing-House. CNAs grant access or issue proof of compliance and advise on procedures for obtaining PIC and concluding MAT.

32 ibid.

33 ibid s111.

34 Biodiversity Act 2022 (Bhutan) (n26).

Rules.[35] This shift effectively reduces the autonomy of IPLCs in granting or withholding consent, as users are no longer required to engage directly with them. Moreover, the new legislation does not provide IPLCs with a veto power or the ability to reject access requests, further diminishing their role in the decision-making process. An important consideration in this regard is whether it is appropriate for a country to allow direct interaction between the user and the indigenous community, placing the responsibility on the user to obtain permission directly from the community without government oversight. This approach carries a potential risk of malpractice and undue persuasion, as communities may lack adequate awareness of the repercussions of their consent and the possible impact on their resources resulting from the intended utilization.

It is important to highlight that while Article 7 of the NP grants flexibility in the manner of implementation, and does not allow states to entirely bypass the obligation to establish regulatory mechanisms governing access to TK. The provision mandates that each state party must take measures to ensure PIC, approval, and involvement of IPLCs before their knowledge is accessed. This language underscores a crucial point that the obligation is not absolute discretion but rather a duty to implement these core elements in a contextually appropriate manner. Moreover, the phrase "prior informed consent or approval and involvement" cannot be interpreted as a mere participatory requirement for IPLCs. Instead, it mandates effective participation, ensuring that IPLCs have a substantive right to approve or reject

[35] Biodiversity Act 2022 (Bhutan), (n26) s 61.

access requests concerning their traditional knowledge. This interpretation is reinforced by a notable distinction: unlike Article 6 of the NP, which allows states to waive PIC requirements for genetic resources, Article 7 does not provide similar discretion for ATK. Regardless of whether a state mandates PIC for GRs, it remains obligated to establish procedural safeguards ensuring community PIC before granting access to ATK.[36]

Thus, while the NP allows national flexibility, it does not absolve states of their responsibility to develop robust regulatory mechanisms that protect IPLCs' rights over their traditional knowledge. By mandating that states establish procedures for obtaining prior approval, consent, and participation, the protocol enhances the involvement of IPLCs in governing the utilization and commercial application of their knowledge.

3. FAIRNESS AND EQUITY IN ABS GOVERNANCE

The principles of fairness and equity have evolved as direct responses to historical injustices and long-standing marginalization faced by IPLCs, serving as foundational concepts in rectifying past wrongs and promoting just outcomes.[37] Far from being abstract ideals, they are integral to legal and moral frameworks aimed at addressing and improving the enduring impacts of such injustices. The ABS framework is grounded in the principles of fairness and equity, which

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[36] Nagoya Protocol, (n2) art 7. It lacks the default clause "unless otherwise determined by the party".

[37] Coenraad Visser, "Biodiversity, Bioprospecting, and Biopiracy: A Prior Informed Consent Requirement for Patents" (2006) 18 S Afr Mercantile LJ 497.

are not merely theoretical constructs but concepts with deep normative and practical relevance.[38] Translating these principles into practice involves navigating a complex array of factors, including the socio-political dynamics within a country, cultural diversity, and differing perceptions of fairness and equity among communities, especially in relation to property ownership, control over traditional knowledge, and the use and regulation of bioresources. PIC and its legitimate procurement have long been regarded as fundamental elements of access regulation under the ABS framework. However, a closer examination reveals that the underlying rationale for obtaining PIC is not merely a procedural compliance, but the advancement of fairness and equity in benefit sharing. When examined from the perspective of IPLCs, who are the traditional custodians of biological resources and associated knowledge, PIC becomes a concrete expression of their right to self-determination. It embodies the recognition of their authority to control access to their knowledge systems and resources. Despite this, a critical issue persists, as many legal systems across the world do not adequately acknowledge or enforce these rights.[39] Communities are often treated as generic stakeholders, without any distinct recognition or special standing, even though they may be afforded limited protections under national legislation. Such protections, however, are rarely sufficient unless these communities are granted a substantive role in biodiversity-related governance and

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[38] See J Agric Environ Ethics (2011) 24:127–146 'What is Fair and Equitable Benefit-sharing?' DOI <https://doi.org/10.1007/s10806-010-9249-3> accessed 21 April 2025; Bram De Jonge. See also S Faizi, 'CBD: The Unmaking of a Treaty' (2004) 5(3) Biodiversity 43-44.

[39] ibid.

decision making. Only through such inclusive, participatory, and rights-based approaches can the foundational principles of fairness and equity within the ABS regime be genuinely achieved.[40] For communities to take an informed decision, it is imperative that they receive clear and adequate information regarding what is going to be accessed, how it will be utilized, and its potential value.[41] Without proper capacity building, the process will not be truly effective. The knowledge of these communities should not be misappropriated; it must be used strictly within the context for which access has been granted.

There must also be transparency and traceability in the PIC procedure. Transparency involves disclosing the purpose of the access, the reasons behind it, and how the knowledge or resource will be used. Traceability ensures that all stages of utilization can be followed and monitored.[42] The overarching aim of these principles is to uphold social justice for the communities involved. As part of ensuring social justice, fair compensation for their contribution is essential and must be recognized as a fundamental requirement. Despite the centrality of PIC in ABS arrangements, no international instrument has yet articulated definitive procedural or substantive requirements for

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[40] Carmen Richerzhagen, 'Effective Governance of Access and Benefit-Sharing under the Convention on Biological Diversity' (2011) 20 Biodiversity and Conservation 2243, 2243–2261.

[41] Charles Lawson, Michelle Rourke and Fran Humphries, 'Information as the Latest Site of Conflict in the Ongoing Contests about Access to and Sharing the Benefits from Exploiting Genetic Resources' (2020) 10 Queen Mary Journal of Intellectual Property 7.

[42] Gianfranco Cerullo, Guido Guizzi, Carmine Massei and Luigi Sgaglione, 'Efficient Supply Chain Management: Traceability and Transparency' (IEEE) <https://doi.org/10.1109/SITIS.2016.124> accessed 21 April 2025.

community-level PIC concerning ATK.[43] Nevertheless, guidance developed by parties to the CBD offers a consensus-based soft-law framework, particularly through the work of the Ad Hoc Open-ended Working Group on Article 8(j).[44]

The CBD's Akwé: Kon Guidelines[45] provide foundational specifications for community PIC, emphasising the need to consider the rights, knowledge, innovations, and practices of IPLCs. These guidelines urge adherence to customary laws regulating the ownership, access, and use of traditional knowledge; the use of culturally appropriate languages and participatory methods; the delivery of accurate and legally sound information; and the allowance of adequate time for decision-making. Any modifications to an initial access proposal require renewed consent from the affected community. Furthermore, communities may customise procedures governing access and utilisation, in accordance with national legislation, and governments are encouraged to support such initiatives upon request. Complementing these provisions, the CBD's Tkarihwaié:ri Code of Ethical Conduct[46] underscores that consent must be obtained freely,

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43 CBD, 'Report of the Eighth Meeting of the Ad Hoc Open-ended Inter-Sessional Working Group on Article 8(j) and Related Provisions of the Convention on Biological Diversity' (7–11 October 2013) UN Doc UNEP/CBD/WG8J/8/7.

44 ibid.

45 Secretariat of the Convention on Biological Diversity, 'Akwé: Kon Voluntary Guidelines for the Conduct of Cultural, Environmental and Social Impact Assessment Regarding Developments Proposed to Take Place on, or Which Are Likely to Impact on, Sacred Sites and on Lands and Waters Traditionally Occupied or Used by Indigenous and Local Communities' (*CBD Secretariat*, 2004) <https://www.cbd.int/doc/publications/akwe-brochure-en.pdf> accessed 21 April 2025.

46 Convention on Biological Diversity (CBD), 'Tkarihwaié:ri Code of Ethical Conduct to Ensure Respect for the Cultural and Intellectual Heritage of

without coercion, manipulation, or undue influence. It further affirms that IPLCs have the right, guided by their own customary laws and procedures, to determine the legitimate holders of ATK and to authorize access accordingly.

Building upon the legal and ethical underpinnings of fairness and equity, the principle of desert offers another normative foundation for ABS. Unlike entitlement-based approaches, desert theory posits that individuals or communities deserve benefits based on the merit of their contributions rather than legal claims alone. In the context of ABS, this principle is particularly relevant where contributions to the conservation, cultivation, or development of GRs/ATK are concerned. The Bonn Guidelines clearly embody this concept, emphasizing that benefits must be shared in a fair and just manner among all parties recognized as contributors to resource management or to the scientific and commercial activities involved.[47] However, operationalizing this principle remains challenging, especially in quantifying and classifying the relative contributions of different stakeholders. The current transactional model under the CBD-Nagoya Protocol Framework often attempts to assign value to GRs/ATK. Yet,

Indigenous and Local Communities' (*CBD,* 2011) <https://www.cbd.int/traditional/code/ethicalconduct-brochure-en.pdf>accessed 21 April 2025.

47 Secretariat of the Convention on Biological Diversity, *Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization* (CBD Decision VI/24, adopted 7 April 2002) <https://www.cbd.int/doc/publications/cbd-bonn-gdls-en.pdf> accessed 21 April 2025.

such valuation rarely captures the full extent of communal and historical stewardship inherent in these contributions.[48]

4. ROLE OF CONSENT MECHANISM IN EFFECTUATING ABS

The aspirations of the Global South, comprising biodiversity-rich developing nations, and the Global North, representing technologically advanced nations aligned with the Western intellectual property regime, have historically diverged in the context of biodiversity governance.[49] While the CBD and its Protocol emerged from the efforts of biodiversity-rich nations to assert control over their GRs/ATK, developed nations prioritized securing minimum intellectual property protection standards through the WTO TRIPS Agreement. The CBD and TRIPS are often perceived as conflicting. The CBD reinforces sovereign rights over GRs/ATK, while TRIPS allows for the patenting of inventions derived from these resources, potentially subjecting biological materials to private intellectual property rights. However, some countries contend that these

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48 Florian Rabitz, 'Biopiracy after the Nagoya Protocol: Problem Structure, Regime Design and Implementation Challenges' (2015) 9(2) Brasília Political Science Review 1, <https://doi.org/10.1590/1981-38212014000200010>; see also Graham Dutfield, 'Protecting the Rights of Indigenous Peoples: Can Prior Informed Consent Help?' in Rachel Wynberg, Doris Schroeder and Roger Chennells (eds), *Indigenous Peoples, Consent and Benefit Sharing: Lessons from the San-Hoodia Case* (Springer Netherlands 2009) 53.

49 Biswajit Dhar and RV Anuradha, *Access, Benefit Sharing, Intellectual Property Rights: Establishing Linkages Between the Agreement on TRIPS and the Convention on Biological Diversity* (Centre for WTO Studies, Indian Institute of Foreign Trade) <https://wtocentre.iift.ac.in/Papers/2.pdf> accessed 23 February 2025

frameworks can be harmonized to achieve mutually beneficial outcomes.[50]

Intellectual property, particularly patents, lies at the centre of concerns regarding the unauthorized exploitation of bioresources. This has given rise to the concept of biopiracy, which describes instances where corporations, often from technologically advanced nations, exploit the GRs/ATK of developing nations without proper authorization or benefit-sharing.[51] The economic value and uniqueness of these resources make them prime targets for misappropriation. Patent systems, in their existing form, often provide avenues for corporations to claim rights over genetic materials, including life forms, which may result in unfair exploitation or free-riding on the knowledge and resources of IPLCs. While biopiracy lacks a universally defined legal framework, it remains widely acknowledged, prompting efforts to address this issue through national regulations and international legal instruments.

Although biopiracy is commonly understood as the misappropriation of GRs/ATK through the patent system, it is not strictly a legal issue. Rather, it is rooted in concerns of morality and equity, making it challenging to distinguish between biopiracy and lawful access and

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50 Ratnakar Adhikari, 'Emerging Issues Relating to Conflicts Between TRIPS and Biodiversity: Development Implications for South Asia' in Centre for Trade and Development (ed), *South Asian Yearbook of Trade and Development 2005* (Centad 2005) 264.

51 Marie Yasmin M Sanchez, 'Combating Biopiracy: Harmonizing the Convention on Biodiversity (CBD) and the WTO Treaty on Trade-Related Aspects of Intellectual Property Rights (TRIPS) in Relation to the Protection of Indigenous Traditional Knowledge and Genetic Resources' (2011) 57 Ateneo LJ 142.

utilization. This ambiguity reinforces the notion of "contextual vagueness" surrounding biopiracy. For example, utilization of traditional knowledge for commercial purposes grounded in a literature review or patent application asserting an invention derived from traditional knowledge or a combination of traditional knowledge and modern science can blur the lines between legitimate use and misappropriation. The concept of PIC emerged as a response to the complexities posed by biopiracy. Without concerns over biopiracy, neither governments nor IPLCs would have advocated for a PIC framework to regulate access to these resources. However, if biopiracy remains a vague and flexible concept, the extent to which prior informed consent can effectively address it remains uncertain.

Precisely, PIC refers to the consent given after receiving complete disclosure regarding the nature of utilization. This disclosure should include details about the user, the type of use, and the intended purpose, such as cosmetics, food products, pharmaceuticals, and other related applications. In essence, the individual or entity granting consent must have sufficient information at their disposal to make an informed decision.[52] Importantly, this consent also entails the authority to either approve or deny access permission. According to Article 15.5 of the CBD, obtaining prior informed consent from the contracting party supplying genetic resources is required before access is granted,

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[52] L S McCarty, C J Borgert and E M Mihaich, 'Information Quality in Regulatory Decision Making: Peer Review versus Good Laboratory Practice' (2012) 120 Environmental Health Perspectives 927 <https://doi.org/10.1289/ehp.1104277>.

unless that party determines otherwise.[53] The objective is to obtain consent from the relevant government authorities rather than individuals or non-state entities. Similarly, Article 8(j) concerning access to traditional knowledge initially included terms like "approval and involvement," but approval may not always equate to consent due to potential gaps in information availability.[54]

It is noteworthy that the effective implementation of mandates on both providers and users hinges on how PIC under the NP is managed during access to resources. Both the CBD and the NP emphasize the importance of obtaining PIC, particularly from IPLCs, when accessing their GRs/ATK. However, whether this PIC requirement under the CBD-NP framework is implemented at the national level remains uncertain, as international law often grants countries the flexibility to determine their approach and is mostly perceived as soft law determinations, even though the CBD Conference of the Parties ("COP")[55] decisions gather political and diplomatic weightage.[56] Consequently, countries may tailor PIC mandates to align with their geopolitical context and perspectives on GRs/ATK.

GRs/ATK represent significant assets for many developing countries. However, because these resources are inherently non-rivalrous and not subject to exclusive control, they cannot be owned or exchanged in the

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53 CBD (n 7) art 15.5.

54 See (n 36).

55 Convention on Biological Diversity, 'Conference of the Parties (COP)' <https://www.cbd.int/cop> accessed 23 February 2025.

56 Melania Muñoz-García and Amber Hartman Scholz, 'Navigating COP16"s Digital Sequence Information Outcomes: What Researchers Need to Do in Practice' Patter <https://doi.org/10.1016/j.patter.2025.101208>.

same way as conventional natural commodities like oil or precious metals. One of the critical challenges in ABS governance is the difficulty of tracking and monitoring biological resources once they leave the territory of the provider country. In this regard, the accurate documentation of PIC can serve a vital function. When properly recorded, it enables traceability by ensuring that relevant information remains attached to the biological resource throughout every stage of its use, including research, development, innovation, commercial preparation, and eventual commercialization. This continuity of information enhances transparency and accountability and strengthens the overall ABS framework. Several user countries have enacted legal, policy, and administrative measures which require that the use of GRs/ATK within their territories comply with the PIC and MAT prescribed by the provider country. Despite this, the lack of effective international monitoring systems, combined with the broad dispersion of these resources and the weak implementation of user country obligations, has led to substantial gaps in enforcement.

A particularly challenging situation arises when users acquire resources indirectly, without entering into formal arrangements such as PIC and MAT with provider countries. In such cases, the absence of a clear regulatory link to the origin of the resource makes it difficult to establish benefit-sharing responsibilities. This often results in the complete bypassing of benefit-sharing obligations, ultimately defeating the purpose of fairness and equity envisioned under the CBD and the NP.

5. EXAMINING PRIOR INFORMED CONSENT IN THE INDIAN ABS FRAMEWORK

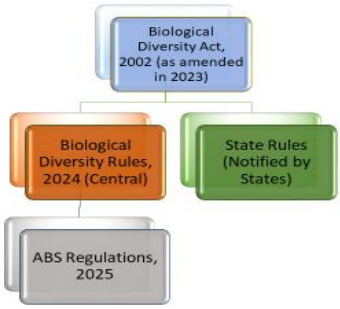

Figure 2: ABS Governance Framework in India

India presents a noteworthy case study for this analysis, as it was among the first nations to establish a comprehensive legal framework for regulating biodiversity access through the Biological Diversity Act, 2002.[57] The country also leads globally in issuing Internationally Recognised Certificates of Compliance ("IRCCs"), which serve as formal proof that PIC was obtained before accessing GRs/ATK.[58] One significant reflection, based on the data from ABS Clearing-House Mechanism ("ABSCHM") under the CBD Secretariat, is that India has reported 3,536 IRCCs.[59] Additionally, data from the National

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[57] Biological Diversity Act 2002, No 18, Acts of Parliament, 2003 (India).

[58] Nagoya Protocol arts 17.1 and 17.2, <https://absch.cbd.int/en/search?schema=absPermit&currentPage=1>, accessed 21 April 2025 (providing direct access to the Internationally Recognized Certificate of Compliance (IRCC) section within the Access and Benefit-Sharing Clearing-House).

[59] See Convention on Biological Diversity (CBD), Guide to the Access and Benefit-Sharing Clearing-House (CBD, 2024) <https://www.cbd.int/abs/en/ABSCHGuide.pdf> accessed 21 April 2025; see also Nagoya Protocol arts 17.1(b)-(c) and 17.2; Ryo Kohsaka, 'The Negotiating

Biodiversity Authority ("NBA") website indicates that in 2024-2025, 5788 approvals were granted to applicants under various categories. The Indian biodiversity regulatory framework is governed by the Biological Diversity Act, enacted in 2002, along with its corresponding rules established in 2004. Over the past two decades, India's regulatory framework for biodiversity governance has undergone substantial legal and procedural reforms, culminating in the amendment of the Biological Diversity Act in 2023 and the revision of the Biodiversity Rules in 2024.[60] Some of these changes have been severely criticised as liberalising the regulation, supportive to the industry and a complete disregard of the environmental concerns. However, these legislative changes are also reflective of the country's evolving approach, shaped by its regulatory experience and commitment to addressing emerging challenges. Given its extensive regulatory history and proactive measures, India serves as a key model for studying the implementation of PIC within the ABS framework.

For instance, India has played a pivotal role in combating biopiracy, with landmark cases such as the turmeric patent[61] in 1995 at the United States Patent and Trademark Office ("USPTO"), the neem patent

History of the Nagoya Protocol on ABS: Perspective from Japan' (2012) 9(1) 56–66.

60 Biological Diversity (Amendment) Act, 2023, No. 10 of 2023, India Code (2023) <http://nbaindia.org/uploaded/pdf/BDAct_2023.pdf> accessed 21 April 2025; Biological Diversity Rules, 2024, Ministry of Env't, Forest & Climate Change, Notification No. GSR 794(E) (22 October 2024) <http://nbaindia.org/uploaded/pdf/BD_Rules.pdf> accessed 21 April 2025.

61 See Anusree Bhowmick, Smaranika Deb Roy and Mitu De, 'A Brief Review on the Turmeric Patent Case with Its Implications on the Documentation of Traditional Knowledge' (2021) 1 E-BIOS 83; see also Sangeeta Udgaonkar, 'The Recording of Traditional Knowledge: Will It Prevent 'Bio-Piracy'?' (2002) 82(4) Current Science 413.

from 1994 to 2005 at the European Patent Office, and the basmati rice patent in 1997 at the USPTO exposing the unauthorized appropriation of genetic resources and associated traditional knowledge by foreign entities. Additionally, the establishment of the Traditional Knowledge Digital Library ("TKDL")[62] in 2001 through a collaboration between the Council of Scientific and Industrial Research and the Ministry of AYUSH has provided a strong defensive mechanism against such misappropriation. The TKDL remains one of India's most significant contributions to global efforts aimed at safeguarding traditional knowledge and genetic resources from exploitation, further reinforcing its role as a crucial model for analyzing the practical implementation of PIC mechanisms. However, TKDL, while envisioned as a defensive mechanism to prevent the misappropriation of Indian Traditional knowledge by foreign entities, has faced significant criticism. Its efforts, primarily focused on cataloguing pre-existing literature without generating new knowledge, have raised questions about potential copyright infringement. Moreover, the TKDL's touted successes in preventing biopiracy have often been overstated, with patent rejections rarely attributable solely to its interventions. A more pressing concern, however, is that its blanket opposition to patent applications has not only targeted foreign corporations but has also unintentionally impeded Indian innovators seeking to commercialize traditional knowledge, thereby undermining domestic innovation under the guise of protection.[63]

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[62] See (n 4).

[63] Prashant Reddy Thikkavarapu and Sumathi Chandrashekaran, 'Why the Traditional Knowledge Digital Library"s Existence Deserves a Thorough Relook.

To understand how the concept of PIC, a key obligatory requirement under the CBD-Nagoya Protocol framework, is integrated into Indian biodiversity regulations, it is crucial to examine how the access framework operates in the domestic law. This is imperative because the PIC obligation cannot be selectively cherry-picked within the Indian framework. The regulatory framework governing access to GRs/ATK in India is closely linked to the legal status and nationality of the user, which determines the type of permissions required. Under the Indian Biodiversity legislation, activities such as access for commercial utilization, research, bio-survey, bio-utilization, transfer of research results, and intellectual property fall within the scope of regulation. Foreign individuals, entities, and non-resident Indians are required to obtain prior approval from the NBA before accessing any GRs/ATK in India.[64] In the context of intellectual property, any foreign applicant seeking rights over an invention based on research or information sourced from Indian biological resources, including those stored in repositories outside the country, or on traditional knowledge associated with such resources, must secure prior approval from the NBA before the rights are granted. Indian nationals or entities intending to apply for intellectual property rights in India or abroad, based on similar resources or knowledge, are required to register with

(*The Wire*, 30 July 2019) <https://science.thewire.in/science/tkdl-csir-neem-patents/> accessed 21 April 2025.

64 Biological Diversity (Amendment) Act 2023 (India), s 3; See also Biological Diversity Rules 2024, Forms 1 & 2, Ministry of Environment, Forest and Climate Change, Notification No G.S.R. 794(E) (22 October 2024) <http://nbaindia.org/uploaded/pdf/cleanBDACT.pdf> accessed 21 April 2025.

the NBA prior to the grant of such rights.[65] Additionally, India's access regulation system follows a hierarchical structure involving governance at the central, state, and local levels, with the PIC obligation incorporated in a "spread-out" manner. The act establishes three government institutions, namely the National Biodiversity Authority ("NBA") at the national level, the State Biodiversity Authority ("SBB") and the Biodiversity Management Committee ("BMC") at the local level. The central government establishes the NBA with a chairperson appointed by the central government as its administrative head. The NBA is responsible for formulating regulations to govern such access and determining the fair and equitable sharing of benefits.[66] The SBB is established by the state government and is led by a chairperson appointed by it.[67] Also, every local body is required to establish a BMC, with Gram Panchayats overseeing this at the rural level and Nagar Panchayats or Municipal Committees at the urban level.[68] The primary role of the BMC is the conservation, sustainable use, and documentation of biological diversity. This includes preserving habitats, landraces, folk varieties, cultivars, domesticated animal breeds, microorganisms, and recording traditional knowledge related to biodiversity. A central tool in fulfilling this mandate is the People's Biodiversity Register ("PBR"), which serves as a decentralized record of biological resources and associated traditional knowledge maintained at the local level. The preparation and maintenance of

65 Biological Diversity (Amendment) Act 2023 (India), s 6.
66 Biological Diversity (Amendment) Act 2023 (India), s 21.
67 ibid s 22.
68 ibid s 41.

PBRs are widely regarded as critical for leveraging community involvement, as they are believed to depend fundamentally on the knowledge, involvement, and consent of local communities ("LCs"). However, despite the perceived importance of community participation in the documentation process, challenges in ground-level implementation have persisted. This gap between policy intent and implementation raises critical concerns about the authenticity and community participation in the process of preparing PBRs.

A significant development in this regard was the 2020 landmark judgement in *Chandra Bhal Singh v. Union of India,* which underscored the mandatory formation of BMCs and the systematic preparation of PBRs.[69] According to the latest data published by the NBA in 2025, a total of 268,647 PBRs have been prepared across 28 states, with an additional 4,498 prepared in union territories, bringing the cumulative national total to 273,145.[70] Despite these impressive statistics, the ground reality indicates that the quality, consistency, and participatory integrity of these PBRs remain uneven and often fall short of intended objectives.[71]

To understand these shortcomings, it is essential to revisit the participatory foundation upon which the PBR framework is built. The process of preparing the PBR is fundamentally participatory and

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69 Supreme Court of India, *Chandrabhal Singh v Union of India*, SLP (Civil) No 25047 of 2018, 25 March 2021 (India).

70 National Biodiversity Authority, *Official Website* <https://nbaindia.org> accessed 21 April 2025.

71 Legal Initiative for Forest and Environment, *Policy Paper Series: People's Biodiversity Registers (PBRs)* (October 2017) < https://thelifeindia.org.in/wp-content/uploads/2021/07/PBR-Publication.pdf> accessed 21 April 2025.

requires extensive engagement with local communities to document both common and specialized ecological knowledge. As envisioned by the NBA guidelines, the methodology of participatory rural appraisal ("PRA") is central to the PBR exercise. PRA emphasizes decentralized planning through community-led consultations, mapping, and dialogue, thereby ensuring inclusivity, transparency, and collective ownership of local biological knowledge. However, despite the procedural emphasis on public participation, the actual implementation on the ground often deviates from this ideal. Given the technical complexity of preparing PBRs, Technical Support Groups ("TSGs") are constituted at the district level, comprising subject matter experts from line departments, universities, research institutions and NGOs. In practice, the task of preparing PBRs is frequently outsourced to external agencies with the requisite technical expertise. Consequently, the role of local communities is largely reduced to passive data providers, thereby undermining the spirit of the PBR process and diluting the very objective of community empowerment and knowledge validation.[72]

Correspondingly, the distribution of regulatory authority is reflective of India's constitutional and legal framework, which allocates legislative and executive powers between the Union and State governments. Accordingly, matters of national importance, particularly

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[72] Legal Initiative for Forest and Environment, *Policy Paper Series: People's Biodiversity Registers (PBRs)* (October 2017) <https://thelifeindia.org.in/wp-content/uploads/2021/07/PBR-Publication.pdf> accessed 21 April 2025. This report cites several instances reflecting the lack of capacity of communities in developing PBRs.

those involving foreign individuals and entities, fall within the jurisdiction of the NBA, a central authority constituted under the aegis of the Government of India. In contrast, the SBBs operate at the state level and are primarily responsible for overseeing ABS and other biodiversity-related activities within their respective territories. At the grassroots level, the BMCs play a pivotal role in local biodiversity governance. Unlike the NBA and SBBs, which function as statutory bodies composed predominantly of government-appointed officials, BMCs are characterized by the involvement of elected representatives from local communities.[73] This participatory structure of the BMCs distinguishes them as the only tier in the regulatory hierarchy that embeds local community representation and facilitates decentralized decision-making in biodiversity conservation and management.

The distinct institutional character accorded to BMCs within the Indian legal framework stems from their role as the formal representatives of local communities. This interpretation is supported by the construction of various provisions under the Biological Diversity Act, which envision BMCs to be the principal interface between local knowledge holders and regulatory authorities. While the NBA and SBBs are empowered to make decisions on ABS and related

[73] *Biological Diversity (Amendment) Act, 2023*, No 10 of 2023, India Code (2023). Section 8 provides that, apart from the Chairperson appointed by the Central Government, the National Biodiversity Authority (NBA) shall consist of sixteen ex officio members representing various ministries, four representatives from State Biodiversity Boards on a rotational basis, and five expert non-official members. Section 22 states that, apart from the Chairperson appointed by the State Government, the State Biodiversity Board (SBB) shall consist of not more than seven ex officio members representing concerned departments of the State Government, including Panchayati Raj and tribal affairs, and not more than five non-official expert members.

matters, they are legally obligated to consult "benefit claimers" where identifiable or, in the absence of specific identification, the relevant BMC. In practice, this consultation mandate is often deemed satisfied if the BMC within the concerned geographical area is consulted, even when the actual knowledge-holding community or individual is not explicitly identified. The legal framework in India, therefore, operationalizes the principle PIC through this consultation process, with the BMC functioning as a proxy for the consent of the LCs. The underlying objective of such consultation is to ensure that the voices of traditional knowledge holders and resource conservers are meaningfully incorporated into decision-making. However, the presumption that BMCs adequately represent all local stakeholders merits closer scrutiny in the context of ensuring equitable and authentic participation.

The Biological Diversity (Amendment) Act, 2023, notably refrains from explicitly incorporating the term *prior informed consent*, reflecting a continuation of India's historically implicit approach to community engagement in biodiversity governance. However, the subsequent Biological Diversity Rules, 2024, mark a substantive shift in this trajectory by expressly integrating the concept of PIC.[74] Rule 11(x) enumerates the functions of the NBA and mandates that the NBA shall facilitate the BMCs, where necessary, in obtaining PIC from local communities for access to biological resources and the associated

[74] Biological Diversity Rules 2024, Ministry of Environment, Forest and Climate Change, Notification No. GSR 794(E) (22 October 2024) <http://nbaindia.org/uploaded/pdf/BD_Rules.pdf> accessed 21 April 2025.

traditional knowledge.[75] This provision signifies India's formal recognition of PIC and its operationalization through state institutions, particularly the BMCs, which are envisaged as conduits for community consent. Further, Rule 13 of the 2024 Rules reinforces this institutional framework by stipulating that the NBA, prior to granting access approvals, *may consult* the concerned BMC either directly or through the SBB or Union Territory Biodiversity Council, as applicable.[76] Crucially, the proviso to this Rule specifies that before conveying its views to the NBA, the BMC *may consult* the community, individual, or entity from whom the biological resource is sourced, thereby ensuring their PIC. Although the language remains permissive rather than obligatory, this layered framework embeds PIC within India's regulatory design, illustrating a nuanced effort to align domestic legal practice with international ABS norms.

The Nagoya Protocol establishes differentiated requirements for PIC concerning GRs/ATK. Specifically, PIC for ATK must be obtained directly from Local Communities. In contrast, for GRs, the consent process is primarily state-driven, consistent with the CBD's recognition of state sovereignty in relation to natural resources. However, this distinction is not reflected in the Indian legal framework under the Biological Diversity Act, which tends to treat GRs and ATK as inseparable due to their practical and epistemological interlinkage, the value of genetic resources often being contingent upon the knowledge associated with them.

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75 Biological Diversity Rules 2024 (India), r 11(x).
76 ibid r 13.

As mentioned above, India implements the PIC requirement of the Nagoya Protocol through a consultation mechanism involving BMCs. However, as consultation is frequently limited to the BMC as a body and not with the actual LCs or individual knowledge holders from whom the GRs or ATK are accessed. Although BMCs are intended to include representatives of Local Communities, there is no statutory requirement ensuring that members of the specific community whose resources or knowledge are being accessed are part of the consulted BMC. Consequently, the requirement of consultation may be technically completed even in the absence of real engagement with the actual holders of the knowledge or resource, resulting in formal compliance without achieving the substance of PIC as mandated under the CBD-Nagoya Protocol Framework.

Furthermore, benefit-sharing payments are typically directed to the BMC, without ensuring direct distribution to the relevant community. This leads to an interesting scenario where the legal requirement of consultation is deemed complete, even though the actual knowledge holders may neither be aware of the process nor have any meaningful role in it. What emerges is a system where prior informed consent is presumed to exist, yet in practice, it may be entirely absent. The effectiveness of PIC is closely linked to the principles of fairness and equity in ABS governance. In India, the absence of a robust PIC framework stems from the constitutional scheme and the long-standing position that all citizens are considered indigenous, with no recognized right to self-determination for any specific community. As a result, a more community-driven PIC model may not effectively

function within the Indian context. Consequently, PIC in India operates entirely under state control.

Both the NBA and the SBB function as government bodies, and the BMC can likewise be regarded as an instrumentality of the state as defined under Article 12 of the Indian Constitution. Functioning as part of the third tier of government within India's political structure, BMC lack the authority to operate independently of state control. Given this socio-political framework, implementing a PIC model that extends beyond state structures is particularly challenging. However, the current model weakens the foundational values of fairness and equity within the ABS regime. Therefore, any meaningful legal reform of India's biodiversity laws must consider how to enhance the effectiveness of PIC while remaining within the constraints of the constitutional framework. Strengthening the features of PIC is essential to ensuring fairness and equity, which remains one of the most pressing challenges in the Indian biodiversity governance system.

6. CONCLUSION

The PIC mandate under the CBD-NP framework comes with a lot of inherent complexities as the semantics largely hint or, rather, in fact, give enough room to the state parties to implement it according to their national circumstances, which is never incoherent.[77] However, the flexibility has often led to the creation of a narrative that PIC is

[77] See Florian Rabitz, 'Biopiracy after the Nagoya Protocol: Problem Structure, Regime Design and Implementation Challenges' (2015) 9(2) *Brasília Political Science Review* 1 <https://doi.org/10.1590/1981-38212014000200010> accessed 21 April 2025.

more of an ethical or moral obligation rather than a legal mandate, leading to diluted implementation.[78] It must be recognized that PIC is a legal obligation, not a discretionary measure. The obligation to implement PIC is essential for a provider country to secure sovereign control over its biological resources. When traditional knowledge is associated, this obligation extends beyond sovereignty to protecting the rights and freedoms of Indigenous Peoples and Local Communities. In today's context, where such knowledge is often used without consent, its utilization results in detrimental decontextualization. PIC thus serves not only as a legal safeguard but also as a means to preserve the integrity and agency of the original knowledge holders. In tandem, it should also be understood that PIC is never a solution or end to itself; rather, it's the initial step in materializing the larger goals of the CBD-NP framework, which are mainly the conservation of biological diversity, sustainable use of its components and access and benefit sharing. In the Indian context, while there may not be an immediate urgency, there is still a need to reimagine its stance on PIC.

India has long been a leading proponent of biodiversity conservation. Cases of biopiracy fought, the contribution of the TKDL, the first reporting of the IRCC, and the highest number of IRCCs granted all belong to India. This suggests that India has one of the strongest ABS frameworks. However, the ground reality reveals significant inconsistencies in translating these safeguards into tangible benefits for

[78] Satyanarayana Rao KH, 'Informed Consent: An Ethical Obligation or Legal Compulsion?' (2008) 1 Journal of Cutaneous and Aesthetic Surgery 33 <https://doi.org/10.4103/0974-2077.41159> accessed 21 April 2025.

conservation, sustainability, and just benefit sharing. Therefore, it is crucial to view PIC as more than just a moral obligation. In reality, meaningful transformation of biodiversity governance in India requires a reimagination of the consultation mechanism to establish a real and effective prior informed consent framework that operates within the Indian constitutional structure. Mere procedural simplifications or regulatory relaxations to accommodate industrial or routine demands cannot be seen as genuine reforms. Achieving the goals set out under the CBD and the NP necessitates the robust and effective enforcement of the PIC requirement, which serves as a fundamental pillar for promoting fairness and equity within access and benefit-sharing governance.[79]

[79] S Faizi, 'CBD: The Unmaking of a Treaty' (2004) 5(3) Biodiversity 43-44.

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ECO-CUSTODIANS: THE PAST, PRESENT, AND FUTURE CONTRIBUTIONS OF GEOGRAPHICAL INDICATIONS (GI) AND TRADITIONAL KNOWLEDGE (TK) TO ENVIRONMENTAL STEWARDSHIP

Jayanta Ghosh and Arka Kumar Nag[*]

Abstract

Through data from as far back as October of 2023, this paper expands out like an expansive rug using centuries of law and conduct to define the law of GIs and TK, and how these two things help to sustain the environment. Drawing on the undulating hills that nurture the cultivation of Darjeeling tea, and the ancestral cadence of indigenous agricultural practices, this research monitors the evolution of eco-custodianship practices that have emerged from cultural mores deeply rooted within particular geographies. Not just market instruments, GIs are sentinels of heritage; they enforce traditional, eco-friendly practices, which help protect biodiversity and reflect the deep connection between the land and its people. Today, TK exists as a library of living ecological intimacy, a lineage carried through generations of Indigenous caretakers whose relationship with the land goes beyond experiencing it through the senses. These communities are stewards of balance, sustainably living in sync with the cadence of their environment. Following the slow international recognition of these bodies of knowledge, TK will emerge as a necessary compass in

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uncertain waters, navigating environmental degradation. But the promise hasn't come without a divide. Current legal frameworks are fragile and only partially fall short of fully enshrining the richness of TK or of protecting GIs from misuse. They face the grave threat of biopiracy and the erosion of cultural heritage, necessitating a robust legal framework that safeguards and emboldens. As a forward-looking paper, this paper envisions a synergetic future in which GIs will cover ecosystem services; meanwhile, TK will be integrated into global conservation paradigms. This messiness holds the promise of a paradigm, a model of an economy in which innovation takes inspiration from tradition and policy time-travels through wisdom. Through uniting policymakers, environmentalists, and cultural torchbearers, the paper calls for a renaissance in environmental stewardship, one that honors the ancient as well as the new in order to guarantee a greener, more rooted future for generations to come.

Keywords: *GI, TK, Environment, Sustainable, Ecosystem.*

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I. INTRODUCTION

Focally on GI and TK positive modes of environmental management, the major roles GI and TK historically and currently play and will play in the future context in ecological conservation.[1] With worsening

[1] Gangjee explores the intersection of geographical indications (GIs) and cultural rights, emphasizing their significance in protecting intangible cultural heritage. The chapter argues that GIs not only serve as tools for economic development but also uphold cultural identities and traditional knowledge. By linking GIs to cultural rights, Gangjee highlights the importance of preserving local practices and cultural expressions against globalization's homogenizing effects. This work

environmental problems playing out in the world, the production and packaging of local tradition and geographically specific products is vital to encouraging sustainable development.[2] The objective of this study is to further identify the functions of GIs and TK in promoting sustainable ecosystems and to demonstrate the importance of these concepts in biodiversity conservation, community survival, and natural resource preservation. Through investigating the implications of GI and TK on the legal, cultural, and environmental facets, this research

contributes to the broader discourse on intellectual property and human rights, advocating for a framework that recognizes the cultural dimensions of GIs within international law. Dev S Gangjee, 'Geographical Indications and Cultural Rights: The Intangible Cultural Heritage Connection?' in Christophe Geiger (ed), *Research Handbook on Human Rights and Intellectual Property* (Edward Elgar Publishing 2015) 544 and the common protection tools: the application of the GIs as a protection model for traditional knowledge is discussed by Blakeney in his work titled 'Protection of Traditional Knowledge by Geographical Indications' (Blakeney 2009). The article states that local practices and products are being protected by GIs (geographical indications) because of their unique cultural and historical significance. As Blakeney points out, there are complexities in establishing GI protections that are equitable both locally and globally. This highlights the importance of developing robust legal mechanisms to safeguard traditional knowledge, enabling communities to derive economic benefits without compromising their cultural integrity. This work is part of ongoing conversations about equitable systems of intellectual property. See, Michael Blakeney, and Thierry Coulet, *Extending the protection of geographical indications* in Getachew Alemu Alemu Mengistie, and Marcelin Tonye Tonye Mahop (eds). (Taylor & Francis, 2012.)

2 AD Basiago (1998) explores the interconnectedness of economic growth, social equity, and environmental preservation in urban planning. The article emphasizes that sustainable development must integrate these three dimensions to address the challenges of urbanization effectively. Basiago critiques traditional development theories that often prioritize economic factors at the expense of social and environmental considerations. By advocating for a holistic approach, the author argues that urban planners should incorporate sustainability principles into their practices, ensuring that future urban environments are resilient, equitable, and capable of meeting the needs of all stakeholders. See Andrew D Basiago, 'Economic, social, and environmental sustainability in development theory and urban planning practice' (1998) 19 Environmentalist 145.

aims to showcase the potential of GIs and TK as vehicles for cultural preservation and environmental protection.

GIs are a legal term used to designate products that originate in a specific geographical area and have qualities or a reputation due to that origin.[3] Such features as specific production methods, climate-associated traits, or naturally occurring resources can constitute these qualities.[4] Other examples (like Darjeeling tea or Roquefort cheese) highlight how GIs protect old, eco-sustainable production methods from industrialization.[5] GI status products not only retain

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[3] Authors examine the role that GIs, which point to the origin of products and their distinctive characteristics, have recently played in trade negotiations. The authors examine the areas of disagreement between developed and developing countries on whether to grant GI protection, reflecting different cultural values and economic interests. They maintain that GIs are not just a type of intellectual property, but a contest over identity and heritage. The article's finds highlight the multifaceted nature of global governance of GIs and their ramifications for trade policy. See, Kal Raustiala and Stephen R Munzer, 'The Global Struggle over Geographic Indications' (2007) 18(2) Eur J Intl Law 337.

[4] Smit et al. (2000) examine the nuanced processes of adaptation to climate change. They stress the need to understand vulnerability, resilience and adaptive capacity at the sectoral and regional levels. Adaptation strategies are also classified by the timescales on which they operate (short- or longterm), and need for integrated frameworks that consider underlying socioeconomic, environmental, and institutional factors are emphasized. They also cover what the policies, technology, and stakeholder engagement are needed to promote effective adaptation. In conclusion, it highlights that effective adaptation will need proactive actions, ongoing learning, and coordination among multiple actors in order to manage climate impacts. See, Barry Smit, Ian Burton, Richard JT Klein and Johanna Wandel, 'An Anatomy of Adaptation to Climate Change and Variability' (2000) 45(1) Climatic Change 223.

[5] Rangnekar (2004) GIs and Socioeconomic Development. This adds to the development of GIs as a tool for local community, market access, and preservation of cultural heritage. He further argues that with proper usage, GIs can play an instrumental role in sustainable development, by means of infrastructure investment, rural livelihoods, creation of dynamic supply chains with farmers, value addition and giving real power back to local communities. They stress that without expansion to address GIs consumers, marketers, and the environment are all at risk, if GIs are not carefully integrated into existing legal concepts beyond just food they may face serious disadvantages as many are

culture and economic value but also ensure environmental sustainability as they require the use of methodologies tested over generations and often at a lower environmental cost than industrial methods.

Traditional Knowledge (TK) includes the collective knowledge, skills, and innovations of indigenous and local communities that have been developed in a sustainable manner in close interaction with their environment over generations.[6] TK involves a deep understanding of local ecosystems, biodiversity, and sustainable resource management.[7]

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beginning to realize. In conclusion, GIs offer an opportunity on how new mechanisms can promote economic development along with environmental sustainability in developing areas. See, Dwijen Rangnekar, Geographical Indications and Localisation: A Socio-Economic and Legal Analysis of India's Speciality Products (UNCTAD-ICTSD Project on IPRs and Sustainable Development, Issue Paper No 8, 2004).

6 Correa, Traditional Knowledge and Intellectual Property. The data is then expelled from the lungs, sometimes in the form of fog and misty clouds that embodies the spirit of the traditions and the cultural practices that characterize the regions where such knowledge is produced and generated in some other rare form. As a result, Correa claims that most systems of intellectual property do not take the nature of traditional knowledge into account, which could lead to the exploitation of traditional knowledge and the loss of such knowledge from indigenous peoples. The author promotes inclusive legal mechanisms that respect and preserve traditional practices while also balancing the interests of knowledge holders and outsiders. This work highlights the importance of equitable solutions in intellectual property discussions. See, Carlos M Correa, Traditional Knowledge and Intellectual Property (Quaker United Nations Office 2001).

7 Jasmine et al. In this context, (2016) discusses knowledge systems in India and how important their role is in biodiversity conservation. Focuses on the sustainability of indigenous people, using their ancestral knowledge to maintain resources and harmony with nature. A range of more traditional methods, including crop rotation and organic farming, have preserved biodiversity throughout the generations, the authors explain. They contend that blending traditional wisdom with contemporary conservation practices can improve ecological robustness. This research calls for policies that recognise indigenous practices and promotes approaching biodiversity conservation collaboratively, with respect to and use of traditional ecological knowledge. See, Biba Jasmine, Yashaswi Singh, Malvika Onial and VB Mathur, 'Traditional Knowledge Systems

For centuries, these communities have often lived in harmony with their environments, developing agriculture, fishing, and land management practices that support long-term environmental health.[8] Similarly, TK is a key element of modern environmental activism, providing answers to modern ecological crises.

The concepts of GIs and TK are relevant to environmental stewardship as they can help with maintaining and advancing sustainable practices.[9] GIs, when securing products based on traditional methods, help to maintain agricultural biodiversity and the sustainable exploitation of natural resources.[10] It is not uncommon for

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in India for Biodiversity Conservation' (2016) Journal of the Indian Institute of Science 1.

8 Roseland (2000) argues that a holistic approach is fundamental to community development. Data up to October 2023 Community Engagement, Roseland points to the importance of including diverse goals and engaging around them up front in the planning process. He promotes cooperative strategies that balance development with environmental equity and social inclusion. It is through a holistic sustainability strategy of integrating policies and practices of these three pillars that communities can achieve sustainability, a better quality of life and respond to pressing social and environmental problems. See, Roseland, Mark. 'Sustainable community development: integrating environmental, economic, and social objectives.' Progress in Planning 54, no. 2 (2000): 73-132.

9 Blakeney (2017) investigates environmental sustainability and GIs. GIs by their nature are regional, which can boost sustainable farming and preserve biodiversity, the article said. According to Blakeney, GIs not only protect unique products but can also promote environmentally sustainable production methods. Underscoring local practices and historical culture, GIs can increase public awareness surrounding ecological concerns that ultimately lead to better economic practices. It recommends the inclusion of environmental aspects in GI frameworks, in order to implement sustainable development. See, Michael Blakeney, 'Geographical Indications and Environmental Protection' (2017) 12(2) Frontiers of Law in China 162.

10 Dagne (2015), discusses the fact that there are some empirical studies that recognize the role of GIs in order to protecting traditional agricultural products. The paper postulates that GIs are a cultural heritage, they are also a form of identity and social significance, therefore they should not be only presented in an economic front. In light of that fact, Dagne promotes a framework that recognizes the value of traditional products and knowledge surrounding them in

GIs to protect products that are produced using processes that reduce environmental degradation, require fewer chemical inputs, and conserve groundwater reserves and soil health.[11] TK, such as utilization of rotational farming, agroforestry, and native plant species[12] is also integral in maintaining ecosystems. GIs and TK provide important lessons on maintaining the fragile balance between human activity and

their own right. Therefore, the study sheds light on the need for a model which goes beyond economic interests to offer legal recognition and protection in order to effectively conserve biodiversity and cultural diversity in agriculture. See, Tesh W Dagne, 'Beyond Economic Considerations: (Re)Conceptualizing Geographical Indications for Protecting Traditional Agricultural Products' (2015) 46(6) International Review of Intellectual Property and Competition Law 682.

[11] Shah and Wu (2019) provide a thorough discussion of potential soil and crop management practices for sustainable crop productivity improvement. They stress the necessity of adopting practices like crop rotation, cover cropping, and reduced tillage to enhance soil health and fertility. They fucking say these strategies can increase crop yields while reducing environmental impacts, therefore supporting agricultural sustainability in the long term. They emphasize the importance of organic amendments and precision farming practices to reduce resource wastage. The paper makes a strong case for adopting a systemic view of agricultural practices that takes into account both productivity and environmental responsibility in the face of changing climates and food scarcity. See, Farooq Shah and Wei Wu, 'Soil and Crop Management Strategies to Ensure Higher Crop Productivity within Sustainable Environments' (2019) 11(5) Sustainability 1485.

[12] Nicole Schulman (2016) Sustainable Management of Agroforestry, (pp. Its about combining trees with agricultural practices which increase carbon storage in biomass and soil, combat climate change. To these ends, the authors discuss different agroforestry systems prominent in India, their advantages for biodiversity, and their capacity to augment soil health and agricultural productivity. Alternative results for: path are: Due to their co-location at the climate-resilient and sustainable development pathways of carbon service, helping livelihoods and ecosystem services, agroforestry not only potentially reduce carbon but is also a well-known strategy to achieve desired sustainability in the similar country context such as India. See, Solanki, Vishnu K., and Amit Sen. "Role of 'Agroforestry in Carbon Sequestration: An Indian Perspective' in P Dhyani, C Ram Newaj and A Chaturvedi (eds), *Agroforestry and Climate Change* (Apple Academic Press 2019) 97.

ecological preservation, through their integration of traditional practices into contemporary environmental management strategies.[13]

The environmental component of GIs and TK is not simply a defensive move to preserve traditional practices but includes an acknowledgement of their importance to sustainable development.[14] GIs and TK both offer avenues toward more responsible environmental stewardship, especially in areas where rapid

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[13] Haq et al. (2023): The Role of Traditional Ecological Knowledge in Forest Restoration. The study highlights TEK provides important knowledge of local ecosystems such as species interactions, historical land use practices, and sustainable resource management strategies. Integrating traditional ecological knowledge into restoration, for example, can help improve biodiversity, enhance community involvement, and allow for greater resilience of restored ecosystems. Below are a few sentences of what the authors write: Scientists must work together with indigenous people to restore forest ecosystems. By incorporating tribal knowledge into the development of forest restoration strategies, policy makers can create a fuller, more sustainable approach that recognizes, fosters, and restores ecological recovery while preserving a cultural way of life that is sacred to that culture. See, Shiekh Marifatul Haq, Andrea Pieroni, Rainer W Bussmann, Ahmed M Abd-ElGawad and Hosam O El-Ansary, 'Integrating Traditional Ecological Knowledge into Habitat Restoration: Implications for Meeting Forest Restoration Challenges' (2023) 19(1) Journal of Ethnobiology and Ethnomedicine 33.

[14] Dasgupta et al. 20 (2023), An Examination of Indigenous and Local Knowledge and Practices (ILKPs) Related to Traditional Jhum Cultivation in the Zunheboto District of Nagaland, India It further underscores their introduction within sustainable development goals (SDGs) and the importance of local ecological knowledge as a sustainability practice. The heritage of ILKPs is vital for augmenting food security and environmental management, as highlighted by the research that reflects on sustainable agricultural practices. By utilizing these practices, development agendas will be aligned with local cultures, and values effectively contribute to the achievement of SDGs. See, Rajarshi Dasgupta, Shalini Dhyani, Mrittika Basu, Rakesh Kadaverugu, Shizuka Hashimoto, Pankaj Kumar, Brian Alan Johnson and others, 'Exploring Indigenous and Local Knowledge and Practices (ILKPs) in Traditional Jhum Cultivation for Localizing Sustainable Development Goals (SDGs): A Case Study from Zunheboto District of Nagaland, India' (2023) 72(1) Environmental Management 147.

industrialization and modern agrarian practices have endangered local ecosystems. GIs and TK-based practices serve as a model of an

Aspect	Past	Present	Future
Cultural Heritage	Protected traditional farming methods and knowledge.	Continues to symbolize cultural pride for the region.	Enhanced preservation of indigenous knowledge and practices.
Economic Impact	Established global recognition and premium pricing due to unique quality.	Supports the livelihoods of tea growers through sustained demand.	Potential to expand economic benefits through diversified GI-based products in the region.
Environmental Impact	Promoted sustainable, low-impact farming techniques (e.g., minimal pesticide use).	Encourages organic and eco-friendly farming, reducing environmental degradation.	Potential integration of ecosystem services into GI protections (e.g., water conservation).
Legal Protection	Secured as the first GI in India, setting a precedent for other products.	Strengthened legal frameworks prevent the misuse of the "Darjeeling" name globally.	Opportunity to expand protection beyond tea to include cultural and ecological services.
Market Recognition	Established a niche market for high-quality tea globally.	Retains strong global branding and reputation for authenticity.	Potential for increased market penetration through sustainability-focused branding.
Challenges	Initial lack of robust enforcement mechanisms for GI.	Faces competition from counterfeit products and challenges in ensuring equitable benefit sharing.	Risk of over-commercialization ; need for maintaining balance between market and sustainability.
Role in Biodiversity	Helped preserve agrobiodiversity through shade-grown cultivation.	Continues to support biodiversity through traditional farming practices.	The possibility of becoming a model for biodiversity conservation linked to GI in other products.
Community Benefits	Supported local communities by providing employment and maintaining traditional livelihoods.	Strengthens community identity and provides economic stability.	Future emphasis on inclusive benefit sharing among small-scale farmers and communities.

eco-friendly production that preserves biodiversity, [15] sustainable use of natural resources while supporting the livelihood of local communities.[16] This helps them to develop more holistic environmental stewardship that integrates both traditional knowledge and modern technology.

Here's a table summarizing the **Impact of Geographical Indication (GI) on Darjeeling Tea** across **Past**, **Present**, and **Future** perspectives:

To underscore the importance of strengthening the legal frameworks surrounding GIs and TK to ensure their continued contribution to environmental protection. By expanding the scope of GI protections

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[15] JK Malaki (2018): Perceptions and Knowledge of Land Cover and Land Use Change in the Nguruman Subcatchment, Kajiado County, Kenya. In his doctoral dissertation he studies how these changes affect local resources and livelihoods. Using qualitative and quantitative analyses, the study illustrates how the community demonstrates an understanding of environmental changes including factors like agriculture, urbanization and climate change. Malaki highlights major challenges for residents such as the depletion of resources and shifts in livelihoods. This highlights the need for consideration of local knowledge in natural resource management as an essential aspect of sustainable development and resilience of the community that translates into better land use planning and policy formulation. See Philista A Malaki, *Perceptions and Knowledge on Land Use and Land Cover Changes and Impact on Resources and Livelihoods in Nguruman Sub-Catchment, Kajiado County, Kenya* (PhD thesis, University of Nairobi 2018).

[16] A Dagne (2012), Geographical indications (GIs) is a tool for protection of traditional knowledge based agricultural products, its significance. GIs can increase the market value of these specific products by drawing attention to the unique characteristics associated with their geographic origin, thus protecting cultural heritage and biodiversity. The analysis explores that adequate protection systems are needed to prevent biopiracy and to guarantee financing for local groups. Dagne ultimately proposes a way forward whereby GIs are incorporated within existing norms of intellectual property that can encourage sustainable development and consideration for traditional knowledge. See, Teshager W Dagne 'Intellectual Property, Traditional Knowledge, and Biodiversity in the Global Economy: The Potential of Geographical Indications for Protecting Traditional Knowledge-Based Agricultural Products.' (2012).

and integrating TK into national and international conservation policies, societies can develop sustainable solutions that not only address environmental challenges but also protect cultural heritage. The study calls for a reevaluation of current policies and practices, encouraging policymakers to embrace the potential of GIs and TK as eco-custodians of both cultural and environmental sustainability.

II. LEGACY OF THE PAST

Geographical Indications (GIs) and Traditional Knowledge (TK) have centuries of historical roots that are deeply integrated with local cultures, economies, and ecosystems.[17] GIs, which mean products associated with specific regions, have been traditionally used to safeguard the authenticity and quality of products that originated in a certain geographical area.[18] A few of its most prominent early examples are French wines such as Champagne and Roquefort cheese.[19] These appellations guaranteed that production followed traditional processes and specific environmental criteria, creating a land link with the item.

TK encompasses the knowledge, skills, and practices that have been developed and accumulated by indigenous and local communities over generations.[20] This was crucial for the sustainable management of

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17 Teshager W Dagne, 'Harnessing the development potential of geographical indications for traditional knowledge-based agricultural products' Journal of Intellectual Property Law & Practice 5, no. 6 (2010): 441-458.

18 Raustiala, Kal and Stephen R. Munzer, 'The global struggle over geographic indications' European Journal of International Law 18, no. 2 (2007): 337-365.

19 Fletcher, Janet. Cheese & Wine: A Guide to Selecting, Pairing, and Enjoying. Chronicle Books, 2011.

20 In their article from 2021, Hossain et al. argue for a holistic, principle-based framework to protect indigenous traditional knowledge (TK) and espouse for the protection of TK through a holistic approach based on principles. The latter

natural resources. They relied on their profound knowledge of local ecosystems, climatic cycles, and biodiversity to maneuver towards long-term survival. For example, indigenous farming systems in the Andean region used terrace farming that preserved soil health and crop biodiversity, which allowed for sustainable agriculture in challenging environments.

Constitutionally, this integration of GIs and TK has led to the sustainable practice in the growing economy which in turn has benefited both the local economies and biodiversity.[21] [5] Darjeeling tea is an important example where the GI status helps preserve not just quality of the product but also preservation of the traditional farming methods, which are based on ecological asks, such as minimal use of pesticides, and shade grown cultivation. Likewise, TK has played a significant role in ecological conservation, as practices such as rotational farming and seed preservation help to keep biodiversity healthy.

The practices have greatly influenced local biodiversity and ecological conservation by highlighting the relationship between humans and

stresses that the TK is particularly sacred, and that the TK landscape must be seen for its cultural, spiritual and ecological value, which existing legal instruments fail to address. Indigenous kinship, rights of land, water and air, enshrined in laws and policies based on respect, reciprocity, and recognition, should govern these intersecting systems of knowledge and practices. Through this approach, they seek to elevate indigenous people, strengthen these rights, and foster practices that are sustainable and pay the respect to their culture and the knowledge they have contributed to the global commons. See, Kamrul Hossain and Rosa Maria Ballardini, 'Protecting Indigenous Traditional Knowledge through a Holistic Principle-Based Approach' (2021) 39(1) *Nordic Journal of Human Rights* 51.

21 Portia Adade Williams, Likho Sikutshwa and Sheona Shackleton, 'Acknowledging Indigenous and Local Knowledge to Facilitate Collaboration in Landscape Approaches—Lessons from a Systematic Review' (2020) 9(9) *Land* 331.

nature.[22] [6] They have protected certain ecosystems, promoted sustainable resource use, and facilitated the conservation of native species, and serve as a model for contemporary environmental management.

III. CURRENT APPLICATIONS IN ENVIRONMENTAL STEWARDSHIP

The tools of GIs and TK have played integral roles in the evolution of environmental protection and sustainable development practices.[23] Only recently, GIs and TK have seen increasing use in environmental conservation efforts, especially in contexts where traditional agricultural practices are integrated into local ecosystems.

GIs as intellectual property tools connect products to specific geographical areas, thereby allowing only goods produced in the defined location following a certain type of production to bear the GI label.[24] These goods, like Darjeeling tea or Roquefort cheese, are not only culturally important; they also tend to be produced using traditional techniques that are relatively low-impact on the environment. These methods translated into GIs actually preserve the ecological balance because most of these methods involve sustainable farming practices such as organic farming, lesser chemical inputs, and conserving water. In this context, GIs are the eco-

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22 Xiangbo Yin, Nicole J Fenton, Mélissande Nagati, Mélanie Jean, Marie-Josée Morency, Patrick Gagné, Jérôme Laganière and Christine Martineau, 'Characterizing Gold Mining Offsite Effects on Soil Physicochemical Properties and Microbial Diversity in Boreal Forest' (SSRN Working Paper 4884780, 2024) https://ssrn.com/abstract=4884780 accessed 30 August 2025.

23 Michael Blakeney, 'Geographical Indications and Environmental Protection' (2017) 12(2) *Frontiers of Law in China* 162.

24 Dev S Gangjee (ed), *Research Handbook on Intellectual Property and Geographical Indications* (Edward Elgar Publishing 2016).

custodians, keeping traditional, time-honored practices alive in a modern, market-driven environment.

One example of this would be the Kona coffee GI from Hawaii.[25] Native coffee plants are synonymous with natural shade-grown cultivation, which is a fundamental part of the cultural practices of the region, as both help reduce soil erosion and maintain biodiversity with the greatest richness of plant and animal life. Once these practices are secured under the GI framework, farmers would be rewarded for continuing to grow sustainably in ways that benefit both local ecosystems and global consumers. These are some of how GIs can contribute to economic development and to the protection of natural resources.

Although GIs have been widely used, focused on the preservation of traditional agricultural practices, TK represents a parallel intellectual property field that is equally relevant, if not more, for sustainable environmental management.[26] TK is the knowledge, practices, and innovations developed by indigenous and local communities over

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[25] Hawaiian coffee, including its unique traits, cultivation methods, and global importance, are broadened in R.C. Elliott (1951). The book runs the list of different kinds of coffee still grown here and their flavors and quality traits. He also covers grading systems used to assess coffee quality, and touches on the importance of proper trading practices in this regard. Not only does this work situate Hawaiian coffee within the broader field of world coffee types, but it also provides an essential resource for understanding both local and international coffee industries. See, Perry F Philipp, *Diversified Agriculture of Hawai'i: An Economist's View of its History, Present Status, and Future Prospects* (2021).

[26] Sheryl Rose C Reyes, Aya Miyazaki, Evonne Yiu and Osamu Saito, 'Enhancing Sustainability in Traditional Agriculture: Indicators for Monitoring the Conservation of Globally Important Agricultural Heritage Systems (GIAHS) in Japan' (2020) 12(14) *Sustainability* 5656.

generations.[27] Locally, this knowledge is not written anywhere; it is ingrained in the local ecosystem and often offers solutions for the sustainable use of natural resources. One example is seen with Aboriginal communities in Australia, where traditional fire management techniques are employed.[28] These prescribed fires are carefully planned and timed to mitigate fire risk, stimulate plant growth, and enhance biodiversity. These practices have been passed down for generations, and their effectiveness has attracted global interest and is being incorporated into the wider environmental management policy.

Andean communities in South America have historically used pre-Columbian irrigation systems for sustainable water-management techniques.[29] Such systems enable water to be stored and distributed economically in dry areas and have made agriculture possible in otherwise inhospitable climates through water conservation. The integration of TK into modern water management practices can also support the sustainable use of limited resources and strengthen the resilience of agriculture to climate change.[30]

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27 John Tharakan, 'Indigenous Knowledge Systems for Appropriate Technology Development' (2017) 123 *Indigenous People* 123.

28 Peter J Whitehead, David MJS Bowman, Noel Preece, Fiona Fraser and Peter Cooke, 'Customary Use of Fire by Indigenous Peoples in Northern Australia: Its Contemporary Role in Savanna Management' (2003) 12(4) *International Journal of Wildland Fire* 415.

29 Charles Ortloff and Michael E Moseley, 'Climate, Agricultural Strategies, and Sustainability in the Precolumbian Andes' (2009) 9(1) *Andean Past* 15.

30 Stephen Chitengi Sakapaji, 'Integrating Local and Indigenous Ecological Knowledge (IEK) Systems into Climate Adaptation Policy for Resilience Building, and Sustainability in Agriculture' (2022) 8(1) *International Journal of Sustainable Development Research* 9.

However, the use of GIs and TK for environmental management faces several challenges. A big problem is the legal regime for both concepts. GIs protect traditional practices, but they fail to capture a broader set of ecosystem services offered by these practices. TK also faces legal complexity and uncertainty, with many indigenous peoples unable to claim or protect their knowledge from being exploited due to barriers of access and rights. Such a lack of coverage may result in the fading of local customs that have ecologically positive implications, because they can be replaced with other measures that definitely give a greater margin of profitability (i.e., economically more feasible, but ecologically less sustainable).

To address these issues, there is increasing talk of expanding the scope of GIs and TK protections to the ecosystem services the benefits that natural ecosystems provide, such as water filtration, carbon sequestration, and biodiversity conservation.[31] As such, GI and TK can play a much more direct role in addressing environmental stewardship if the scope of legal protection is broadened to include these services. This would promote organic, sustainable methods,

[31] Kpienbaareh et al. (2020), shows how farmers leverage their local environmental knowledge in optimizing the decision that best promotes agricultural sustainability. The study highlights how combining ecological principles with traditional agricultural practices can inform agricultural decision-making, encouraging users to consider local biodiversity and ecosystem services where they were not previously. The authors conclude that giving farmers the power of ecology to manage their land resources can help create more sustainable farming systems as well as conserve biodiversity in agricultural landscapes. Daniel Kpienbaareh, Rachel Bezner Kerr, Isaac Luginaah, Jinfei Wang, Esther Lupafya, Laifolo Dakishoni and Lizzie Shumba, 'Spatial and Ecological Farmer Knowledge and Decision-Making about Ecosystem Services and Biodiversity' (2020) 9(10) *Land* 356.

which is good for not just local economies but global environmental health.

The presence of GIs and TK in environmental management suggests that they can contribute to sustainable development. GIs are one tool for the preservation of traditional agricultural systems that promote ecological processes, while TK provides invaluable information relevant to the sustainable management of a wide range of ecosystems. Ignoring this will undermine our ability to continue using GIs and TK to promote environmental stewardship, increasingly needed to address climate change and associated loss of biodiversity.[32] In response to the ecological challenges of the twenty-first century, we must expand protections and ensconce these concepts in local, national, and

[32] In Blakeney (2009) cited by the author within TK and GIs as instruments for the protection of cultural heritage and economic development. In response, the article argues that traditional knowledge is associated with the local communities that hold them and the specific geographical locations they are rooted in, which makes them prone to be exploited and appropriated. GIs are able to do this through identification they identify what you produce as coming from that region. Blakeney investigates the legal mechanisms that underpin the protection of GIs, noting that such protections discourage the use of a GI without proper authorization and guarantee that the economic advantages originating from the GIs flow back to the communities that uphold the traditional practices associated with those products. The challenges of integrating TK into existing intellectual property systems, which are often ill-equipped to address the complexities of communal ownership and cultural significance, are also discussed in the paper. In the end, he promotes the implementation of GIs as a useful option in traditional knowledge protection, highlighting the importance of specific, culturally appropriate legal instruments that acknowledge and protect diversity to foster sustainable development. This piece adds to the conversation surrounding how existing intellectual property law can evolve in order to help protect indigenous and local peoples' rights and heritage. Michael Blakeney, 'Geographical Indications as a Springboard for the Protection of Traditional Knowledge' (2009) 3 *International Journal of Intellectual Property Management* 357.

international environmental policies, thereby harnessing traditional knowledge and geographical indications, respectively.

IV. CHALLENGES AND LIMITATIONS

The legal, systemic, socio-economic, and cultural challenges of protecting and utilizing GIs and TK for environmental stewardship outnumber . However, three main limitations that hinder the effective use and application of these tools in order to protect ecosystems have been identified.

A. SYSTEMIC AND LEGAL ISSUES

The first major legal problem is that the current legal frameworks that govern GIs and TK are inadequate.[33] Few legal systems have regulations that provide comprehensive and enforceable protection of

[33] T.W. Dagne examines the correlations between intellectual property rights, traditional knowledge, and development, outlining how legal frameworks can protect the creativity and collective rights involved in traditional knowledge-based agricultural products. As Dagne argues, traditional knowledge which is frequently locked in the minds of farmers after generations of learning is key for cultural cohesiveness and sustainable agricultural practices. But that knowledge often is vulnerable to predation without proper legal safeguards. They propose that the use of geographical indications (GIs) be used as a tool for the protection of traditional knowledge and products of traditional knowledge. GIs are a legal mechanism that connects products to their geographic origins, guaranteeing acknowledgment and protection for unique qualities associated with art and local resources. According to Dagne, "It is very important that legal frameworks not only acknowledge the rights of indigenous and local communities, but also promote equitable distribution of benefits." This enables countries to utilize traditional knowledge to promote development, safeguard food security, preserve biodiversity, and therefore respect the cultural heritage of communities. In sum, Dagne emphasizes conceptualizing policy approaches that take a wider view on the intersection between intellectual property rights and the pursuit of sustainable development and social justice. See, Teshager Dagne, 'Law and Policy on Intellectual Property, Traditional Knowledge and Development: Legally Protecting Creativity and Collective Rights in Traditional Knowledge Based Agricultural Products through Geographical Indications' (2010) 11(1) *Estey Journal of International Law and Trade Policy* 78.

traditional knowledge, especially in developing countries. And in places where protections do exist, the World Intellectual Property Organization (WIPO), for example, its ambit is often narrow.[34] Many existing legal frameworks do not encompass all forms of TK, which creates vulnerabilities for indigenous practices to be exploited or appropriated by external entities.

Also, GIs are limited to particular products and regions and do not usually apply to broader environmental services or assets.[35] For instance, products such as Darjeeling tea receive protection under the GIs, but the ecosystem that contributes to the product's production is not further protected.[36] This restrictive view limits the usage of GIs as powerful instruments of wider environmental protection. Additionally,

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[34] Carolyn Deere Birkbeck, *The World Intellectual Property Organization (WIPO): A Reference Guide* (Edward Elgar 2016).

[35] Authors claim that integrating ecosystem services can improve land use decision making and sustainability. The authors note, however, some challenges in the approach, such as poor data, insufficient stakeholder engagement, and institutional barriers. They highlight interdisciplinary approaches and collaborative frameworks as necessary means to overcoming these hurdles. Through a integration approach, the authors ensure an integrated framework that enhance environmental management aligning ecological health with socioeconomic objectives, leading to resilience of both ecosystems and communities. See, Christina von Haaren and Christian Albert, 'Integrating Ecosystem Services and Environmental Planning: Limitations and Synergies' (2011) 7(3) *International Journal of Biodiversity Science, Ecosystem Services & Management* 150.

[36] In Besky (2014) investigates the complex dynamic of geographical indication (GI) and the Darjeeling tea sector. GI not only safeguards the distinct qualities of Darjeeling tea, but also influences labour practices on the plantations. Besky looks at the socioeconomic stakes for workers — terroir matters, obviously, for the taste of the tea, but also for the conditions under which it's produced. In intertwining the concepts of terroir and labor the article highlights the complexity of agricultural production and the need for awareness of the humanity behind the production of specialty items, such as Darjeeling tea. See, Besky, Sarah. "The labor of terroir and the terroir of labor: Geographical Indication and Darjeeling tea plantations." Agriculture and Human Values 31 (2014): 83-96.

the bureaucratic process for securing GI status can be costly in terms of time and money, making it a formidable challenge for small, often resource-constrained communities.

B. GAPS IN POLICY

Policy gaps greatly influence the application of GIs and TK in conservation efforts.[37] Although GIs can spur sustainable agricultural practices, policy frameworks rarely incorporate GIs and TK into broader conservation strategies. Current policies placing more emphasis on the economic gains from GIs improved market access and product differentiation as opposed to their environmental benefits.

Underscoring this are mismatches between intellectual property law and environmental law. TK is only seen as a good thing, whatever that means, while in reality, without specific TK protections in many biodiversity policies , indigenous peoples are left without legal recourse when traditional practices are threatened.[38] GI and TK are rarely considered as integral components of environmental management as a whole in relevant policy frameworks, and therefore,

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[37] Charles McManis and Yolanda Terán, 'Trends and Scenarios in the Legal Protection of Traditional Knowledge' in Charles McManis and David Novak (eds), *Intellectual Property and Human Development: Current Trends and Future Scenarios* (CUP 2011) 139.

[38] In Correa (2001), contends existing intellectual property systems do not adequately safeguard the rights of indigenous populations, creating opportunities for their knowledge to be taken without compensation. It promotes the design of appropriate legal forms that respect and protect traditional practices, to ensure fair access and benefit-sharing. Correa emphasizes the importance of encouraging dialogue between stakeholders to balance policies that preserve cultural heritage with policies that promote innovation in "Contexts of Action". Carlos M Correa, *Traditional Knowledge and Intellectual Property* (Quaker United Nations Office 2001).

many of their synergies remain underutilized in driving sustainable development.

C. Socio-Economic and Cultural Barriers

In addition to legal and policy challenges, socio-economic and cultural impediments also create major barriers to the implementation of GIs and TK.[39] Quite a few indigenous groups live in poverty and lack the financial or technical means to overcome the legal barriers to GI or TK protection because the relevant processes are arduous, slow-moving, and necessitate significant knowledge of the legal system. And while GIs can provide benefits to producer groups, such as pre-existing knowledge, those benefits can accrue to a few actors, like manufacturers, even though economic returns for indigenous knowledge holders may be inequitable.[40]

In a cultural perspective, GIs can lead to the commercialization of traditional knowledge, which can be detrimental to local customs and values.[41] Knowledge from indigenous practices can easily become

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39 T.W. Dagne (2014), Geographical indications: A window into the intersection of intellectual property rights and traditional knowledge. This book argues that GIs can serve the purpose of sustainable development and provide communities rural development with the tools to preserve their cultural heritage and benefit economically. It's a work about global trade dynamics and how indigenous communities struggle to protect their traditional knowledge from exploitation. Advocating for inclusive policies and frameworks, the author highlights the need to incorporate local practices into the global economy, promoting equitable development and cultural preservation. Teshager W Dagne, *Intellectual Property and Traditional Knowledge in the Global Economy: Translating Geographical Indications for Development* (Routledge 2014).

40 Boyd Blackwell, Kerry Bodle, Janet Hunt and Boyd Hunter, *Estimating the Market Value of Indigenous Knowledge* (2019).

41 In Wong and Fernandini also investigate the tension between the protective framework around traditional cultural expressions (TCEs) and the infringement on innovation in such forms. TCEs, the authors contend, are critical to cultural

disconnected from the communities that developed it when it is commercialized, compromising their cultural relevance. Indeed, in some cases, communities have actively sought to avoid informally codifying their knowledge in legal forms for fear that finding a place for knowledge to reside will violate its sacredness or communal nature.

Over-commercialisation of GIs can lead to indigenous knowledge being commodified, which could distance owners of this knowledge from cultural heritage. As TK is increasingly subjected to the forces of the market, the ethical dilemma remains whether the knowledge would be misused without protecting the underlying cultural and spiritual contexts from which it originated.

Both the challenges to be faced and the limitations of the protection of GIs and TK in environmental stewardship are complex and multifaceted.[42] Shortcomings in legislation, policy, socioeconomic

identity and heritage, but their authenticity is threatened by globalization and commerce. They highlight the need to find a balance between preservation and enablement of creation, pushing for policies that protect culture while enabling adaptability. Ensuring the sustainability of cultural practices in the realm of this dynamic, establishing respect for indigenous knowledge and affirming the role of cultural expressions in human development these three axes become increasingly relevant within this dynamic. See, Tzen Wong and Graham Dutfield (eds), *Intellectual Property and Human Development: Current Trends and Future Scenarios* (CUP 2010).

[42] Brown and Hay-Edie, based on the experience of COMPACT, promotes participatory approaches that engage local stakeholders. They underscore the importance of community involvement in safeguarding cultural and natural heritage, not only to improve social cohesion, but also to foster sustainable development. It does so by promoting partnerships between local communities, authorities, and heritage organizations that will bring them a sense of ownership and responsibility and will, therefore, help them manage the World Heritage sites in a better and more effective way. See, Jessica Brown and Terence Hay-Edie, *Engaging Local Communities in Stewardship of World Heritage: A Methodology Based on the COMPACT Experience* (vol 40, UNESCO 2014).

environments, and cultural contexts also make the successful roll-out of these tools more challenging. For tackling these issues, a multifaceted approach is needed that, beyond enhancing the legal protections, goes beyond the way GIs and TK were integrated duly into the broader environmental and economic frameworks.[43] In addition, building equitable partnerships between policymakers, indigenous communities, and environmentalists is vital in achieving the goal of GIs and TK contributing to sustainable development and environmental stewardship. Overcoming these hurdles can ultimately realize the full potential of GIs and TK as effective mechanisms for supporting biodiversity and protecting the environment.

D. Traditional Knowledge in India and the Relevance of the WIPO Treaty 2024

India presents a compelling jurisdiction for the study of Traditional Knowledge (TK), given its immense biodiversity, vibrant indigenous cultures, and a long-standing history of orally transmitted knowledge systems. From the tribal ethno-botanical practices of the Northeast to the Ayurvedic medicinal systems rooted in ancient Sanskrit texts, TK in India encompasses a wide range of ecological, medicinal, cultural,

[43] Peter Martens, claims that GIs can increase the market value of local products and offer legal recognition and protection to owners and producers of traditional knowledge, empowering them. Martens focuses on the challenges they face, from legal restrictions to market access issues. He highlights the importance of supportive policies and international cooperation in ensuring that GIs can support sustainable development and economic benefits in such regions. See, Patrick Martens, 'Can Traditional Knowledge Owners and Producers in Developing Countries Use Geographical Indications for Protection and Economic Development Gain?' in *Society of International Economic Law (SIEL), 3rd Biennial Global Conference* (2012).

and spiritual practices that are deeply intertwined with the everyday lives of local communities. However, this knowledge has long remained vulnerable to exploitation, particularly in the context of biopiracy and misappropriation by multinational corporations under the guise of research, innovation, and commercial development.

The Indian government has responded through a range of domestic measures aimed at the protection of TK. Most notably, the Traditional Knowledge Digital Library (TKDL) was created to document ancient medicinal knowledge from texts such as the *Charaka Samhita* and *Unani* manuscripts, making them accessible to patent offices globally to prevent wrongful appropriation. India has also invoked provisions of the Biological Diversity Act, 2002, and aligned its strategies with the Convention on Biological Diversity (CBD) and the Nagoya Protocol. However, while these national frameworks offer a degree of defensive protection, they have been criticized for being reactive, overly bureaucratic, and often out of sync with the dynamic, community-driven nature of TK systems.

Against this backdrop, the WIPO Treaty on Intellectual Property, Genetic Resources, and Traditional Knowledge (May 2024) marks a watershed moment in the global recognition of TK. This treaty, adopted after over two decades of negotiation under the WIPO Intergovernmental Committee (IGC), provides the first binding multilateral legal instrument specifically designed to address the intellectual property implications of TK and genetic resources. For countries like India, which have long championed a more equitable

international framework, the treaty serves both as a vindication of their advocacy and a new legal lever for safeguarding community rights.

The treaty mandates prior informed consent (PIC) and mutually agreed terms (MAT) before the use of TK or genetic resources in patentable innovations. It strengthens the obligation of patent applicants to disclose the origin of TK and associated biological materials, thereby improving traceability and transparency. For Indian policymakers, this aligns well with the disclosure provisions under the Indian Patent Act, 1970 (as amended), but provides enhanced standing in international forums to challenge patents granted without proper benefit-sharing.

Moreover, the WIPO Treaty emphasizes the role of indigenous peoples and local communities (IPLCs) as rights-holders rather than merely stakeholders. This shift compels countries like India to revisit their top-down legal frameworks and consider reforms that would devolve more decision-making power to the community level. By integrating international obligations with grassroots empowerment, India can emerge as a leader in operationalizing TK governance that is both legally robust and culturally sensitive. The 2024 WIPO Treaty presents a critical opportunity for India to harmonize its domestic regimes with evolving global norms. By doing so, it can ensure that the custodians of traditional knowledge are not only protected from exploitation but are also empowered as stewards of ecological sustainability and innovation.

V. FUTURE POTENTIAL

GIs & TK have tremendous potential to impact the future of environmental sustainability, and their leveraging can further lead to an enhanced ecological aspect.[44] One of the most relevant approaches to expand the coverage of GIs is to include ecosystem services in their protection systems. At present, GIs mainly centre around product-based protection, for instance, wines, teas, and cheeses , associating them with certain geographical regions and traditional production techniques.[45] But GIs can also expand to include ecosystem services like biodiversity conservation, water purification, and soil fertility management. For example, the GI status of a forest-based product

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[44] Pant (2015), highlights the need to protect indigenous knowledge systems that play a decisive role in conserving biological diversity and sustaining cultural heritage. It acknowledges the issues that arise in protecting traditional knowledge (the impacts of biopiracy, for example) and the gaps in legal systems. It is calling for well designed policies that ensure that local communities are acknowledged and supported and that sustainable practices can be upheld. Through discussions about the principle of free prior informed consent, the WIPO General Assembly, and the Convention on Biological Diversity, the author emphasizes the need to protect traditional knowledge using conventions as well as local tools while underlining the importance of local collaboration to protect the rights of indigenous peoples. In the end, the work highlights the importance of splicing traditional knowledge with modern approaches to environmental management. See, Pant, Ruchi. "Protecting and promoting traditional knowledge in India." International Institute for Environment and (2015).

[45] Johnson, D. A. (2017). GIs: The Market-Making Role of Geographical Indications in U.S. Agricultural Products. Geographical indications (GIs) are signs used on products that have a specific geographical origin and possess qualities, reputation or other characteristics inherent to that location, so GIs help build consumer trust and develop products in a region. This report examines the legal structures for GIs in the context of international trade agreements. It also focuses on the competitive advantages GIs present to American producers, while also noting obstacles presented by the American regulatory landscape. In general, the report highlights how GIs can boost U.S. agricultural trade and bolster economies in rural America. See, Johnson, R., 2017. Geographical indications (GIs) of US food and agricultural trade. Congressional Research Service Report 21.

might include the conservation practices associated with the management of that forest ecosystem. This would provide a strong incentive for local communities to practice sustainable management of their environments, since the subsequent ecosystem services would be valued and incorporated into the value chain for the goods that they produce. This would lead not only to the preservation of the product but also to increasing the motivation to preserve the entire ecosystem.

Moreover, other frameworks should be developed to strengthen the synergy needed between GIs and TK. Presently, GIs and TK are largely viewed as separate and disparate spheres of intellectual property law, even though they are united under the common goals of cultural heritage protection, sustainable practices, and environmental stewardship. This protection of TK could be made automatic simply through an integrated legal regime granting protection of a GI. For example, if a region's agricultural product receives GI status, the relevant traditional farming practices and ecological knowledge should be concurrently protected through TK protections. Community intellectual Property Rights, which integrates the environmental and cultural elements of both GIs and TK into one overall paradigm, can help achieve that purpose. Doing so will protect traditional practices from being exploited while also fostering the protection of these practices as irreplaceable elements of GIs by adding both traditional production practices and traditional processed products.

Robust GI and TK frameworks at the global level can significantly impact long-term global environmental sustainability. Some have argued that recognition of GIs is important in maintaining biodiversity,

protecting water, and encouraging organic farming practices by giving value to traditional ecological knowledge and practices.[46] These frameworks guarantee local communities the legal protections and economic incentives to continue their traditional natural resources management wisdom. As GIs and TK become more enmeshed in global trade and environmental policies, the cumulative effects on ecosystems may grow. There are compounding benefits: for instance, soil health improves, decreasing or eliminating reliance on chemical inputs, in those regions where GIs promote sustainable agricultural practices like agroforestry or permaculture.[47] Ultimately, this can be

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[46] Nugroho et al study (2023) investigates the balance of traditional knowledge and science based sociotechnical measures for successful upper watershed management. It provides a theoretical lens which highlights the role of local practices in safeguarding environmental integrity. The authors survey extant practices, including such successful case studies where traditional knowledge has been combined with modern techniques. They call for a more integrative and respectful approach which seeks to incorporate indigenous knowledge into the management of watersheds, and promote dialogue with all stakeholders involved. They say that integrating BEP valued river service with other basic environmental services in upper watershed areas is important for improving sustainability and environmental sustainability capacity. See, Nugroho, Hunggul Yudono Setio Hadi, Markus Kudeng Sallata, Merryana Kiding Allo, Nining Wahyuningrum, Agung Budi Supangat, Ogi Setiawan, Gerson Ndawa Njurumana et al. "Incorporating traditional knowledge into science-based sociotechnical measures in upper watershed management: theoretical framework, existing practices and the way forward." Sustainability 15, no. 4 (2023): 3502.

[47] Moreover, Kremsa (2021) examines sustainable management practices for agricultural resources, including both crops and livestock. Fostering Development of Ecological Agricultural Production System: Integrating Ecological Principles into Agricultural System to Improve Productivity and Reduce Environmental Impact. Kremsa also explores the impact of technology on sustainable farming, including cutting-edge data analytics and automated systems, which can enhance decision making and resource management. Altogether, the work demonstrates the need for an integrative perspective for resource management using agricultural practices to inform that balance between economic viability, environmental stewardship, and social responsibility. See, Kremsa, Vladimír Š. "Sustainable management of agricultural resources

linked to larger planetary goals concerning climate change mitigation and biodiversity conservation over time.

Furthermore, TK's integration into environmental governance approaches will bolster community resilience amid ecological crises like climate change and habitat loss. The presence of indigenous and local communities, who have managed their lands with a sustainability mindset through many generations, will remain a crucial actor in the global struggle to protect the environment. With the increased usage of TK in policy-making, it has witnessed the restoration of ecosystems that were destroyed by practices inherent of industrial agriculture and unsustainable practices. In the long term, these approaches offer healthier ecosystems, more sustainable local economies, and a more resilient planet.

This potential of GIs and TK in the environmental stewardship space suggests a way forward. Broaden the definition of GIs to recognize not only their environmental, but also their ecosystem service and biodiversity benefits, strengthen the synergies between GI and TK protections, and apply them to global environmental governance. Beyond safeguarding cultural heritage and with traditional knowledge to protect biodiversity, sustainable land management will be promoted, facilitating long-term ecological resilience.

(agricultural crops and animals)." In Sustainable resource management, pp. 99-145. Elsevier, 2021.

VI. POLICY RECOMMENDATIONS

Drawing from the research findings, a number of policy improvements are proposed to strengthen the contributions of GIs and Traditional Knowledge TK to environmental stewardship.

1. INCREASING LEGAL PROTECTIONS:

Both GIs and TK should therefore be protected in a comprehensive legal framework directly aimed at this. These frameworks must acknowledge the environmental, cultural, and economic importance of local knowledge and traditional practice and avoid their extraction or erosion. Policies should also encourage local communities to maintain sustainable practices by giving them economic or ecological advantages for complying with GI and TK standards.

2. WELL-INTEGRATED LOCAL AND INDIGENOUS KNOWLEDGE:

Policy solutions need to prioritize and integrate local and indigenous knowledge in environmental management decision-making. As key ingredients in the conservation of ecosystems and biodiversity, GIs and TK have proven their worth. Ultimately, national policies should be developed together with local communities so as to ensure that their wisdom is taken into account, integrated , and appropriately reflected in broader conservation frameworks. Such integration can improve sustainable resource management and facilitate community-based interventions.

3. INTERNATIONAL COLLABORATION:

The global management of GIs and TK must be strengthened through international cooperation. The strategies should include cooperation among countries to encourage harmonized approaches for the protection of GIs and TK, with an emphasis on the environment. Multilateral treaties and partnerships can establish platforms for exchanging knowledge and best practices. It would also assist in fighting cross-border practices such as misappropriation and erosion of TK.

GIs and TK, therefore, if supported by national and cosmopolitan policy, can become even more relevant as powerful instruments for sustainable development and guardians of biodiversity. To support this, we recommend the following to rekindle a healthy relationship between local communities and global ecological systems.

VII. CONCLUSION

The importance of GIs and TK as Geographical Environmental Sustainability and their potential to promote sustainable practices. For example, on the cultivation side, GIs, which have roots going back to the importance of a name to protect your production, remain fundamental for protecting traditions (Darjeeling tea), and during this period, we see big investments in China with world heritage. In a similar way, the understanding of TK forged by generations of people interacting with the ecosystems in which they live offers tangible methods for preserving biodiversity and managing resources sustainably.

As we think about the future, GIs and TK are strong tools to tackle environmental problems. GIs provide legal mechanisms for safeguarding and promoting eco-friendly practices by requiring the use of traditional, low-impact techniques. TK, on the other hand, gives a glimpse into complete ecosystem management, which can come in handy in the face of climate change and environmental degradation. Yet to be most impactful, these tools will need deeper legal protection to curb the exploitation of indigenous knowledge, among other things, and promote and protect the use of sustainability practices.

Finally, the study advocates for a more sophisticated treatment of GIs and TK on the policy agenda. The way for policymakers, environmentalists, and local communities to work together with the goal of incorporating these frameworks into greater environmental management plans. As environmental challenges continue to threaten the well-being of the planet and its inhabitants, the recognition of GIs and TK offers a necessary pathway, integrating sustainable practices with the rich tapestry of innovation and tradition, positioning them as crucial allies in the global battle for a greener future.

15 IJIPL 224-234 (2025)

BOOK REVIEW

THE INTERFACE OF INTELLECTUAL PROPERTY LAW WITH OTHER LEGAL DISCIPLINES

CHRISTOPHE GEIGER (ED.) [ATRIP INTELLECTUAL PROPERTY SERIES]

PUBLISHED BY EDWARD ELGAR (2025)

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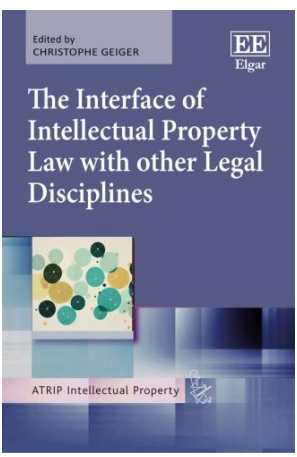

Intellectual property's entanglement with contract, bankruptcy, tax, tort, human rights, antitrust, administrative law, and beyond has long been a staple of academic inquiry, yielding valuable but often compartmentalised insights. IP scholarship is infamous for its insatiable curiosity and propensity to provoke complex discussions.

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This book stands out for its attempt to map the most important intersections in a single cohesive framework, treating globalisation and comparative history, legal and regulatory areas, and doctrinal and ethical discussions as components of a single ecosystem. Instead of providing a collection of sporadic essays on IP's numerous detours, Christophe Geiger's book (or rather, this collection of essays) creates a map that gives readers the conceptual tools they need to explore well-known areas in novel ways and envision policy proposals that go beyond accepted bounds.

"Setting the Table: A Taxonomy of Intellectual Property's Interactions with Other Legal Regimes and Disciplines" by Rochelle Cooper Dreyfuss opens the book on the anticipated, even if necessary, note of tracing the development of intellectual property law as an interdisciplinary field with profound implications for the entire legal landscape. The thorough taxonomy presented in this book comes at a time when intellectual property has moved beyond its historical bounds to play a crucial role in international economic growth, technological advancement, and public policy.

In examining the connections between IP law and various legal disciplines, including economics, psychology, and cultural studies, the work exhibits a high level of analytical depth. With remarkable accuracy, Dreyfuss' tripartite taxonomy is presented in the introductory chapter. It begins with a historical and comparative study looking at how differences in legal systems and emerging innovation trends have revealed possible improvements in intellectual property protection design. This comparative method makes use of the

substantial body of research by theorists who have questioned whether traditional exclusive rights are the best way to promote innovation. Although Dreyfuss's awareness of new scholarship on innovation incentives is evident in the book's discussion of alternative reward systems like grants and prizes, the analysis could use a closer look at recent empirical work on prize mechanisms especially the substantial literature that followed the success of advance market commitments for pneumococcal vaccines and the expanding body of research on innovation tournaments.[1] Debates surrounding the development and distribution of the COVID-19 vaccine have brought attention to the contemporary relevance of such alternative systems. It has been argued that traditional patent incentives were insufficient to guarantee equitable global access and that hybrid models that combine patents with targeted prizes or advance purchase commitments may be the way of the future for innovation policy for essential medicines and global public goods.[2]

The second branch of the taxonomy deals with forum shopping and globalisation, which have become much more prevalent since TRIPS was put into effect and bilateral and regional trade agreements proliferated. Understanding how intellectual property disputes, increasingly becoming cross-national, open doors for strategic litigation and regulatory arbitrage is reflected by Dreyfuss's analysis of

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1 Michael Kremer, Jonathan D Levin and Christopher M Snyder, 'Designing Advance Market Commitments for New Vaccines' (2020) National Bureau of Economic Research Working Paper 28168. https://www.nber.org/system/files/working_papers/w28168/w28168.pdf accessed 5 August 2025.

2 ibid.

jurisdictional complexities and forum shopping. More thorough examination of recent advancements in cross-border patent litigation, specifically the emergence of specialised IP courts in different jurisdictions and the phenomenon of 'patent nationalism' in which nations increasingly aim to establish themselves as favourable venues for specific kinds of intellectual property disputes, would improve the book's treatment of this subject.[3] According to research by Drezner, Sell, and others, forum shopping in IP matters is not just a technical legal problem but is a reflection of deeper power imbalances in the global intellectual property system where multinational corporations and developed nations can take advantage of jurisdictional differences, while smaller organisations and developing nations face major obstacles to effectively enforcing their rights.[4]

The book provides an in-depth enquiry into the relationship between intellectual property and contract law, with Dreyfuss deftly handling the intricate conflicts that emerge when conventional contract law collides with the distinctive features of intellectual property rights. This forces courts and practitioners to consider whether intellectual property rights are actually property rights with *erga omnes* effects or whether they are better understood as regulatory privileges that function within a complex web of contractual relationships. The discussion of how IP contracts affect third parties represents one of

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3 Timothy Lau, 'Patent Nationalism and the Case for a new US Patent Working Requirement' (2018) 42 BYU L Rev 95.

4 See Daniel W Drezner, *All Politics is Global: Explaining International Regulatory Regimes* (Princeton University Press 2007). Susan K Sell, 'Cat and Mouse: Forum-Shifting in the Battle over Intellectual Property Enforcement' (American Political Science Association Meeting, Toronto, 3-6 September 2009).

the most theoretically challenging areas of contemporary IP law. The book's examination of conventional contract defences in relation to intellectual property is insightful. One of the book's most creative analytical contributions is the way it treats tax and tort law as substitute mechanisms for promoting or restricting innovation, showing how innovation incentives can be significantly impacted by regulatory instruments other than the conventional IP system.

Policymakers' increasing awareness that traditional patent protection might not be enough to sustain competitive advantage in knowledge-intensive industries is reflected in the discussion on patent box policies and other tax incentives for IP development. The examination of the function of tort law in innovation policy is especially illuminating. Recent research by academics like Viscusi and others has shown that the interplay between tort liability and patent protection can result in intricate incentive structures that, depending on the particulars of the sector and the risks involved, may either promote or inhibit innovation.[5]

It is challenging to author a book review for a book which is not cohesive in its conventional sense, with chapters covering diverse swaths of IPR. Hence, the subsequent portions of the book review focus on specific chapters within the book. It is not possible to comprehensively address each chapter in a short-form review such as this. Hence, the authors have narrowed down certain specific portions.

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[5] W Kip Viscusi, 'Does Product Liability Make Us Safer?' Vanderbilt University Law School Law and Economics Working Paper Number 11-11 (2011) https://ssrn.com/abstract=1770031 accessed 5 August 2025.

This is not to take away from chapters that have not been dealt with comprehensively herein below. The choice is based more on the arguments that the authors found personally engaging, and does not take away from the superb quality of the other pieces in any manner.

An important theoretical advancement in the book is Peter Yu's hierarchical framework for examining intellectual property in the context of human rights. The four layers of production, interest, protection, and limitation offer a practical analytical framework for comprehending how various types of intellectual output relate to the larger framework of human rights. A more thorough examination of current advancements in international human rights law, particularly the expanding acknowledgement of cultural rights and the right to science as essential human rights that might clash with conventional IP protection, would have improved the book's discussion of this framework. Because the exclusive rights granted by IP protection may clash with fundamental human rights obligations, the intersection of IP rights and human rights has gained significant attention in discussions surrounding access to necessary medications, educational resources, and cultural works. These conflicts are not just theoretical. Recent research by academics like Grosse Ruse-Khan has shown that they also have practical ramifications for the formulation of public policy and the rendering of court decisions in both developed and developing nations.[6]

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[6] Henning Grosse Ruse-Khan, 'Overlaps and Conflict Norms in Human Rights Law: Approaches of European Courts to Address Intersections with Intellectual Property Rights' in Christophe Geiger (ed) *Research Handbook on Human rights and Intellectual Property* (Edward Elgar Publishing 2015).

Growing worries about the ability of private platforms to make quasi-judicial decisions regarding the legality of user-generated content are reflected in Fischman-Afori's identification of transparency, due process, and public oversight as essential components of accountable copyright enforcement. It is a particularly relevant contribution considering the emergence of algorithmic enforcement mechanisms and automated content filtering systems in copyright enforcement. One of the most important issues facing modern copyright law is highlighted in the book's discussion of algorithmic opacity, where the growing use of automated systems to identify and eliminate allegedly infringing content poses serious risks of over-enforcement and censorship. Researchers like Maayan Perel and Niva Elkin-Koren have shown through their work that the current algorithmic enforcement systems have serious shortcomings in transparency and accountability, which could jeopardise free speech rights as well as the careful balancing act that copyright law requires between public interests and copyright protection.[7]

Jessica Lai and Susy Frankel's chapter on the treatment of pharmaceutical innovation and the complex relationship between patent protection and regulatory data exclusivity represents a sophisticated analytical contribution, demonstrating how different forms of intellectual property protection interact in highly regulated industries. The discussion of "mission creep" between patent protection and regulatory exclusivity is particularly valuable,

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7 Maayan Perel and Niva Elkin-Koren, 'Accountability in Algorithmic Copyright Enforcement' (2016) 19 Stan Tech L Rev 473.

highlighting how pharmaceutical companies have increasingly relied on regulatory barriers to competition even when patent protection is unavailable or has expired. Recent work has demonstrated that the interaction between patent protection and regulatory exclusivity has created opportunities for pharmaceutical companies to extend their market exclusivity well beyond the traditional patent term through various forms of regulatory gaming and strategic behaviour.[8]

The analysis of biologics as requiring different protection mechanisms than traditional small molecules reflects growing recognition that the traditional patent system may be ill-equipped to handle the unique characteristics of complex biological products. The book's discussion of the twelve-year data exclusivity period for biologics in the United States demonstrates understanding of how policymakers have attempted to adapt IP protection to the specific needs of biotechnology innovation. The emergence of biosimilar competition has created new challenges for traditional approaches to pharmaceutical innovation incentives.

A philosophically complex area of intellectual property law- morality-based exclusions from patentability in biotechnology- is covered in the chapter by Joanna Wisniowska. The chapter's handling of this subject shows a suitable level of sensitivity to the ethical aspects of patent protection for living things and related technologies. The ongoing battle by courts and patent offices to create cogent concepts for moral

8 Amy Kapczynski, 'Order Without Intellectual Property Law: Open Science in Influenza' (2017) 102 Cornell L Rev 1539.

restrictions on patentability is reflected in the discussion of recent decisions that have muddled the distinction between unethical commercial exploitation and intrinsic moral objections to biotechnological inventions. The chapter could have benefited from a more thorough comparative examination of the various approaches taken by national patent offices and the substantial jurisprudence of the European Patent Office regarding moral exclusions. Patent law's moral exclusions raise important issues regarding the interplay of ethics, law, and technological advancement that call for consideration of larger ethical and philosophical frameworks, rather than being settled by a purely legal explanation.

A sophisticated grasp of how various IP rights can either support or contradict one another in intricate business relationships can be found in Roberto Carapeto's explanation of trade secrets and how they interact with other types of intellectual property protection. Trade secrets are becoming increasingly recognised as a significant component of the entire intellectual property landscape, especially in sectors where patent protection may be ineffective or unavailable. This is reflected in the discussion of the Economic Espionage Act and its implications for trade secret protection.

In modern legal scholarship, Yukun Ziao's investigation of the relationship between copyright law and competition law is a theoretically complex topic since it necessitates balancing the pro-competitive objectives of antitrust law with the exclusionary effects of intellectual property rights. Understanding the delicate balance that must be struck between defending lawful IP rights and preventing anti-

competitive abuse of those rights is demonstrated by the discussion of how IP licensing practices can give rise to antitrust concerns. Recent changes made to US and EU competition laws relate to intellectual property licensing, especially the increasing acknowledgement that some IP licensing strategies may violate antitrust laws even when they involve legitimately granted intellectual property rights. Sophisticated economic analysis that transcends conventional formalistic approaches to both areas of law is necessary to understand the intersection of IP and competition law.

In their chapter on the subject of contractual overridability in copyright law, Phalguni Mahapatra and Anindya Sircar explore how the emergence of digital content platforms is causing creative governance to move from statutory copyright to private ordering-primarily through digital rights management systems and end-user license agreements. These contractual instruments, which are usually framed as non-negotiable take-it-or-leave-it clauses, give copyright owners the ability to impose limitations that go beyond those found in copyright statutes. They frequently supersede public-interest exceptions like fair use and restrict fundamental user liberties. The authors' analysis highlights the resulting super-copyright, which restricts the public domain and makes it more challenging to engage in activities like lending, backup, and criticism, thereby shifting the balance between owners' rights and public access. They point out that users are not well aware of these limitations and that although legislative initiatives in the UK, EU, and Singapore are beneficial, they are insufficient and frequently produce unclear results. The chapter

makes a strong case for the need for more robust legal safeguards, increased transparency, and additional research to make sure that contract law does not covertly jeopardise copyrights, statutory balance and public-interest mission in order to protect creativity and user access in the digital age.

Takakuni Yamane and Chang Liu's respective chapters on the intersection of IP law with criminal enforcement mechanisms highlight a progressively significant area of legal practice, especially in light of the sophistication and globalisation of intellectual property crimes. An awareness of how criminal law can supplement civil enforcement mechanisms and provide extra deterrence against widespread commercial infringement is established by the book's treatment of criminal IP enforcement. Recent advancements in international co-operation on intellectual property crimes, especially initiatives to standardise criminal penalties among various jurisdictions and enhance law enforcement agency coordination, are the subject of much discussion. There exists extensive discussion of recent developments in international co-operation on IP crimes, particularly efforts to harmonise criminal penalties across different jurisdictions and improve coordination between law enforcement agencies. Recent scholarship has demonstrated that criminal enforcement of IP rights raises significant concerns about proportionality and due process, particularly when criminal penalties are applied to activities that may

not clearly constitute infringement or where the boundaries between legitimate and illegitimate uses of IP are unclear.[9]

In conclusion, Christophe Geiger's edited book is a noteworthy accomplishment in the field of intellectual property study since it clearly illustrates how closely intellectual property law is related to almost every other area of the legal profession. The authors' ideas from a variety of fields- some discussed in more detail, while others were unfortunately left out offer helpful frameworks for understanding these relationships and highlight the necessity of continuing interdisciplinary research and policy development. Although there is ample scope for more in-depth exploration of recent scholarly and empirical research topics, the book effectively establishes the foundation for future multidisciplinary work in intellectual property law. Consequently, it will be an essential tool for scholars, practitioners, and policymakers who want to understand and negotiate the constantly changing terrain of modern intellectual property law and how it interacts with the larger legal system(s).

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[9] Christopher Buccafusco and Jonathan S Masur, 'Innovation and Incarceration: An Economic Analysis of Criminal Intellectual Property Law' (2014) 87 S Cal L Rev 275.

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