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GEOGRAPHICAL INDICATION AND ITS INFRINGEMENT IN THE METAVERSE: CHALLENGES UNDER INDIAN LAW

Shruthi Sarang S Kamath[1]

I. ABSTRACT

Articles 22 to 24 of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), concluded on 15 April 1994 and in force from 1 January 1995, created the first comprehensive multilateral minimum standards for the protection of Geographical Indications within the World Trade Organization framework. Multilateral protection of indications of source is older, and rests on the Paris Convention of 1883, the Madrid Agreement of 1891 and the Lisbon Agreement of 1958. Geographical Indications are protected in order to prevent the public from being misled and to restrain unfair trade practices. In India, the Geographical Indications of Goods (Registration and Protection) Act, 1999 implements these obligations. A Geographical Indication identifies goods whose quality, reputation or other characteristics are essentially attributable to their geographical origin. The emergence of the Metaverse has created new virtual environments for communication, commerce, entertainment and the creation of digital assets. These developments offer opportunities to promote geographically distinctive Indian products in virtual markets, and they create new challenges for the protection of Geographical Indications (GIs). The increasing use of GI names, indications and representations in virtual goods, digital merchandise and virtual marketplaces raises questions about the applicability and effectiveness of the existing legal framework. This paper examines whether the existing Indian GI framework, particularly Sections 2(1)(e), 2(1)(f) and 22 of the GI Act, 1999, addresses the use and infringement of Geographical Indications in the Metaverse, in the light of India's obligations under Articles 22 to 24 of TRIPS. It analyses the statutory definitions of "geographical indication" and "goods" and the application of the infringement provisions to emerging forms of virtual use. This research adopts a doctrinal methodology based on an analysis of statutes, judicial decisions, international legal instruments, scholarly literature and other relevant legal materials. The study addresses the interpretation of GI

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infringement in the Metaverse, cross-border jurisdiction, the identification of infringers and the enforcement of remedies.

II. KEYWORDS

Geographical Indications, Metaverse, TRIPS Agreement, Geographical Indications of Goods (Registration and Protection) Act, 1999, Infringement, Virtual Environment.

III. INTRODUCTION

Geographical Indication is an inherent part of Intellectual property which identifies any good that is produced or originated from a particular geographical region, wherein the quality, reputation and other characteristics are attributed to its geographical origin[2]. Geographical Indication not only protects commercial interest of producers but also the reputation and distinctiveness associated with particular regions and traditional products[3].

Articles 22 to 24 of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), concluded on 15 April 1994 and in force from 1 January 1995, recognise the protection of Geographical Indications at the international level and establish minimum standards of protection, certain exceptions and related matters[4]. The Indian legislature has enacted a separate legislation, the *Geographical Indications of Goods (Registration and Protection) Act, 1999*, which gives effect to the TRIPS Agreement and provides for the registration and protection of Geographical Indications as well as protection against their infringement[5][6].

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[2] PRATIKSHA PRAVIN BARVE, *Geographical Indications and Their Protection in India*, 2 INT'L J. LEGAL RES. & ANALYSIS, no. 7, Oct. 2024, at 31, https://www.ijlra.com/details/geographical-indications-and-their-protection-in-india-by-pratiksha-pravin-barve.

[3] VIRENDRA AHUJA, *Protection of Geographical Indications: National and International Perspective*, 65 J. INDIAN L. INST. 105 (2023), https://www.researchgate.net/publication/372419358_PROTECTION_OF_GEOGRAPHICAL_INDICATIONS_NATIONAL_AND_INTERNATIONAL_PERSPECTIVE.

[4] AGREEMENT ON TRADE-RELATED ASPECTS OF INTELLECTUAL PROPERTY RIGHTS arts. 22–24, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299.

[5] The Geographical Indications of Goods (Registration and Protection) Act, 1999, No. 48, Acts of Parliament, 1999 (India).

[6] KIRTI BIKRAM, *Article on Geographical Indications*, 3 MANUPATRA INTELLECTUAL PROP. REP. 142 (2014), http://docs.manupatra.in/newsline/articles/Upload/42119A6A-EBC6-471C-8E20-FC10640DEC09.pdf.

Geographical Indication is commonly associated with physical products in physical market especially in particular association of geographical region from where the product originates such as Darjeeling Tea, Kanchipuram Silks, Mysore Silk, Madhubani Paintings, Kolhapuri chappals etc[7].

Metaverse is considered as an immersive, three dimensional, virtual, and multi-user online environments[8]. Meta means beyond and verse means universe[9]. With the development of Metaverse, individuals and businesses have started to interact, communicate and engage in commercial activities through virtual platforms. Metaverse has led to development of new forms of digital commercial activities such as virtual goods, digital merchandise, and virtual market place[10].

A. Statement of the Research Problem

The emergence of virtual goods, digital representation and digital marketplace has created new challenges regarding the protection of GIs. Although, the Geographical Indications of Goods (Registration and Protection) Act, 1999 provides foundation for protection of GI, but application of existing provisions to unauthorized digital representation and commercial use of protection GI names remain uncertain. This raises concern regarding protection of reputation of GI protected goods, prevention of misleading geographical origin and the interests of authorized producers in virtual environments.

The central problem lies in determining the extent to which the existing laws address infringement in Metaverse and other virtual marketplaces. The applicability of the statutory definition of "goods" under Section 2(1)(f) to digital merchandise and virtual representation requires examination. It is also necessary to analyze whether and under what circumstances the unauthorized commercial use of GI protected goods

[7] MAHEK PANJWANI, *Challenges in the Digital Age: Online Counterfeiting of GI Products*, IPLINK ASIA (July 24, 2024), https://www.iplink-asia.com/article-detail.php?jurisdictions=7&id=1175.
[8] DAVY TSZ KIT NG, *What Is the Metaverse? Definitions, Technologies and the Community of Inquiry*, 38 AUSTRALASIAN J. EDUC. TECH. 190 (2022).
[9] J.D.N. DIONISIO, W.G. BURNS & R. GILBERT, *3D Virtual Worlds and the Metaverse: Current Status and Future Possibilities*, 45 ACM COMPUT. SURV., no. 3, 2013, at 1.
[10] NITIN RANE, SAURABH CHOUDHARY & JAYESH RANE, *Metaverse Marketing Strategies: Enhancing Customer Experience and Analysing Consumer Behaviour Through Leading-Edge Metaverse Technologies, Platforms, and Models*, SSRN ELEC. J. (Dec. 8, 2023), https://ssrn.com.

constitute infringement under Section 22 of the Act. The research therefore examines the adequacy of the existing Indian legal framework in addressing GI infringement in virtual environment.

B. Research Gap

There is considerable legal literature regarding the protection of Geographical Indication and its infringement under Indian law and TRIPS Agreement, however the application of GI protection in virtual marketplace, virtual environments and metaverse is not much explored.

This paper examines in particular the relationship between Section 2(1)(e), which defines "geographical indication", Section 2(1)(f), which defines "goods", and Section 22, which governs infringement, under the *Geographical Indications of Goods (Registration and Protection) Act, 1999*[11]. The study addresses that gap by examining the application of the existing GI Act, 1999, to evolving forms of virtual GI use and infringement.

C. Significance of the Study

The emergence of the Metaverse and of virtual marketplaces has created new challenges for the protection of GIs, particularly in relation to their unauthorised use and misrepresentation in virtual environments. Indian GI products such as Darjeeling Tea, Kanchipuram Silks, Mysore Silk, Madhubani Paintings and Kolhapuri Chappals carry considerable geographical reputation and commercial value[12]. Their unauthorised representation in virtual environments raises questions concerning consumer deception, the reputation of the indication and the interests of authorised producers. The study is therefore significant because it examines the adequacy of the existing law in addressing GI infringement arising from such representation.

[11] The Geographical Indications of Goods (Registration and Protection) Act, 1999, No. 48, Acts of Parliament, 1999 (India).
[12] MAHEK PANJWANI, *Challenges in the Digital Age: Online Counterfeiting of GI Products*, IPLINK ASIA (July 24, 2024), https://www.iplink-asia.com/article-detail.php?jurisdictions=7&id=1175.

D. Aim and Objectives of the Study

1. To examine the concept of Geographical Indication protection and its infringement in the Metaverse under the TRIPS Agreement and Indian law.
2. To analyse Sections 2(1)(e), 2(1)(f) and 22 of the *Geographical Indications of Goods (Registration and Protection) Act, 1999*[13].
3. To examine whether the virtual goods and digital assets fall under the existing legal framework governing the Geographical Indications.
4. To analyze the forms of GI Infringement in Metaverse including circumstances in which the use of GI names and representations in virtual goods, digital merchandise, and virtual marketplaces leads to infringement.
5. To examine the challenges relating to cross-border infringement and jurisdiction as well as the identification of anonymous and pseudonymous infringers in virtual environments.
6. To examine the civil and criminal remedies for addressing the infringement of GI in the metaverse.
7. To assess the relevance of Articles 22 to 24 of the TRIPS Agreement to the evolving forms of GI use in the Metaverse[14].
8. To recommend legal and policy measures for strengthening GI protection in the virtual environment.

E. Research Questions

1. Whether the existing Indian legal framework is adequate enough to address the use of GI and its infringement in the Metaverse.
2. Whether purely virtual goods fall within the statutory definition of "goods" under the *Geographical Indications of Goods (Registration and Protection) Act, 1999*[15].

[13] The Geographical Indications of Goods (Registration and Protection) Act, 1999, No. 48, Acts of Parliament, 1999 (India).
[14] AGREEMENT ON TRADE-RELATED ASPECTS OF INTELLECTUAL PROPERTY RIGHTS arts. 22–24, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299.
[15] The Geographical Indications of Goods (Registration and Protection) Act, 1999, No. 48, Acts of Parliament, 1999 (India).

3. Whether, and in what circumstances, the "use" of a GI in a virtual environment constitutes infringement under Section 22 of the *Geographical Indications of Goods (Registration and Protection) Act, 1999*[16].

F. Research Hypothesis

The existing legal framework provides for the foundational protection of Geographical Indications and its infringement but may not be sufficient enough to address the emerging forms of the virtual GI infringement in the metaverse in particular to the relation to the virtual goods, cross -border infringement. Independent variable is the emergence and nature of digital representation and commercial uses of GI in virtual environments, whereas the dependent variables are the adequacy of the existing Indian legal framework in addressing the GI infringement in virtual environments. The hypothesis will be examined through doctrinal analysis of legislations, international legal instruments, judicial decisions and other literary articles by scholars.

G. Scope and Limitations of the Study

This study examines the concept of Geographical Indications under Indian law, with particular reference to the Metaverse.

The principal legislation examined is the *Geographical Indications of Goods (Registration and Protection) Act, 1999*, in particular Sections 2(1)(e), 2(1)(f) and 22[17], together with Articles 22 to 24[18] of the TRIPS Agreement. The study deals with virtual goods, digital merchandise, digital representations of GIs, the unauthorised use of GI names, cross-border infringement, jurisdiction, anonymous infringers, and the enforcement of remedies for such infringement.

The study is subject to certain limitations. The Metaverse is an evolving technological environment, and its forms of commerce and digital assets continue to develop. The

[16] *Id.*
[17] The Geographical Indications of Goods (Registration and Protection) Act, 1999, No. 48, Acts of Parliament, 1999 (India).
[18] AGREEMENT ON TRADE-RELATED ASPECTS OF INTELLECTUAL PROPERTY RIGHTS arts. 22–24, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299.

paper therefore addresses the position as it currently stands, and future developments will require the subject to be reconsidered.

H. Research Methodology

This study adopts a doctrinal and analytical methodology. The primary sources examined are the Geographical Indications of Goods (Registration and Protection) Act, 1999, the Trade Marks Act, 1999, the Information Technology Act, 2000 and the rules framed under it, and Articles 22 to 24 of the TRIPS Agreement[19]. The secondary sources comprise judicial decisions of the Supreme Court of India and of the High Courts, peer-reviewed journal articles, institutional reports and academic commentary on Geographical Indications and virtual commerce.

The statutory provisions are analysed by applying the settled rules of statutory interpretation to the language and purpose of the Act, and the judicial decisions are examined in order to determine the extent to which existing principles accommodate virtual use. The study is confined to primary and secondary legal materials and does not involve empirical or field research. Citations follow the Bluebook system of uniform citation.

I. Literature Review

1. **International Protection of India's Geographical Indications with Special Reference to "Darjeeling" Tea – Kasturi Das (2006):** This paper examines the international GI protection under TRIPS, including different levels of protection under Articles 22 and 23. This paper is relevant to this study as it establishes the international legal foundation for analyzing GI protection under Indian law. However, it does not examine GI protection for virtual products or the application of Indian GI legislation to the Metaverse.[20]
2. **Additional Protection for Geographical Indications in India: A Working of Section 22(2) of Indian GI Act – L.P. Lukose (2022):** This paper analyses

[19] AGREEMENT ON TRADE-RELATED ASPECTS OF INTELLECTUAL PROPERTY RIGHTS arts. 22–24, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299.

[20] KASTURI DAS, *International Protection of India's Geographical Indications with Special Reference to "Darjeeling" Tea*, 9 J. WORLD INTELL. PROP. 459 (2006).

Section 22(2) of the Indian GI Act and the additional protection available to certain categories of goods under Indian Law. This paper is relevant to this study as it helps explain the statutory framework relevant to examination of GI infringement under Section 22. However, it does not address whether purely virtual products qualify as goods under Section 2(1) (f) or how Section 22 applies to Metaverse.[21]

3. **Marketing Geographical Indication Products in the Digital Age: A Holistic Perspective – Chiaro Bartoli, Enrico Bonetti and Alberto Mattiaci (2022):** This paper examines how digitalization affects GI product marketing, consumer relationship, product experiences and the integration of physical and virtual spaces. This paper is relevant to this study as it explains the commercial opportunities and challenges that digital environments create for geographically distinctive products. However, it majorly focuses on marketing rather than legal infringement and does not analyze Indian GI Act or Metaverse specific legal protection.[22]
4. **The Localization of IP Infringements in the Online Environment: From Web 2.0 to Web 3.0 and the Metaverse- Eleonora Rosati (2023):** This paper examines the location of intellectual property infringements in online environments and the jurisdictional difficulties associated with the Metaverse. This paper is relevant to this study as it analyzes the cross - border jurisdiction, applicable law and enforcement challenges involving virtual marketplace. However, it addresses intellectually property generally rather than the specific requirements of GI infringement under Indian law.[23]
5. **Enforceability of Trade Mark Rights in Metaverse: Where Virtual World Meet Legal Realities- Timothee Charmeil (2024):** This paper examines the enforceability of trade mark right in the Metaverse and the uncertainty surrounding the application of existing trade mark principles to virtual

[21] L.P. LUKOSE, *Additional Protection for Geographical Indications in India: A Working of Section 22(2) of Indian GI Act*, 27 J. INTELL. PROP. RTS. 325 (2022), https://doi.org/10.56042/jipr.v27i5.62742.
[22] CHIARA BARTOLI, ENRICO BONETTI & ALBERTO MATTIACCI, *Marketing Geographical Indication Products in the Digital Age: A Holistic Perspective*, 124 BRIT. FOOD J. 2857 (2022).
[23] ELEONORA ROSATI, *The Localization of IP Infringements in the Online Environment: From Web 2.0 to Web 3.0 and the Metaverse*, 18 J. INTELL. PROP. L. & PRAC. 720 (2023).

products and services. This paper is relevant to this study as it provides comparative perspective on protecting commercial identifiers against unauthorized use in virtual environments. However, it majorly focuses on trademarks rather than GIs and does not resolve whether virtual products fall within Section 2(1) (f) or satisfy the infringement requirements of Section 22 of the Indian GI Act.[24]

IV. THE CONCEPT OF GEOGRAPHICAL INDICATION

Geographical Indications (GIs) are an important form of intellectual property rights. GIs are used for legal protection for products specific to a geographical region and have unique qualities or characteristics associated with that region[25][26]. Article 22 of TRIPS agreement defines Geographical Indication as indication which is a sign used on products that have specific geographical origin and possess qualities, a reputation or characteristics that are essentially attributable to that place of origin[27] [28]. In India GIs are protected under the parent legislation *"Geographical Indications of Goods (Registration and Protection) Act, 1999"* which was enacted to implement the TRIPS agreement in India[29]. This act lays down the registration and protection of GIs in India. GIs have become a vital tool for cultural preservation and economic growth at international level as well as in India[30][31].

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[24] TIMOTHÉE CHARMEIL, *Enforceability of Trade Mark Rights in Metaverse: Where Virtual Worlds Meet Legal Realities*, 19 J. INTELL. PROP. L. & PRAC. 860 (2024).
[25] L.T. THIRUMARUDHAN ET AL., *Geographical Indications: Global Trends and Indias' Progress in Agricultural and Handicraft Products*, 12 PLANT SCI. TODAY (2025).
[26] *WORLD INTELL. PROP. ORG., Geographical Indications, https://www.wipo.int/en/web/geographical-indications (last visited Oct. 12, 2026).*
[27] L.P. LUKOSE, *Additional Protection for Geographical Indications in India: A Working of Section 22(2) of Indian GI Act*, 27 J. INTELL. PROP. RTS. 325 (2022), https://doi.org/10.56042/jipr.v27i5.62742.
[28] AGREEMENT ON TRADE-RELATED ASPECTS OF INTELLECTUAL PROPERTY RIGHTS arts. 22–24, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299.
[29] *INDIRA GANDHI NATIONAL OPEN UNIVERSITY, Indian Law on Geographical Indications, in INTELLECTUAL PROPERTY PROTECTION 5 (2003), https://egyankosh.ac.in/bitstream/123456789/15478/1/Unit-7.pdf.*
[30] L.T. THIRUMARUDHAN ET AL., *Geographical Indications: Global Trends and Indias' Progress in Agricultural and Handicraft Products*, 12 PLANT SCI. TODAY (2025).
[31] SUNIL VARNEKAR & UPANKAR CHUTIA, *Protecting Cultural Heritage and Promoting Economic Growth Through Geographical Indications: A Critical Legal Analysis*, RESEARCHGATE (2025).

This study examines the relationship between GI protection, virtual environments and infringement under Indian law. It mainly focuses on whether a purely virtual product falls in the ambit of the statutory definition of "goods" under Section 2(1) (f) of the Act and whether any unauthorized use or misleading use in virtual environments may fall within Section 22 of the Act[32][33].

A. Development of Geographical Indication and its protection

Articles 22 to 24 of the Agreement on Trade-Related Aspects of Intellectual Property Rights, concluded on 15 April 1994 at the close of the Uruguay Round of the GATT and in force from 1 January 1995, created the first comprehensive multilateral minimum standards for the protection of Geographical Indications within the World Trade Organization framework[34]. Multilateral protection of indications of source and appellations of origin nonetheless predates TRIPS. It is traceable to the Paris Convention for the Protection of Industrial Property, 1883[35], the Madrid Agreement for the Repression of False or Deceptive Indications of Source on Goods, 1891[36], and the Lisbon Agreement for the Protection of Appellations of Origin and their International Registration, 1958[37]. The operation of the TRIPS Agreement is monitored by the Council for TRIPS under the World Trade Organization[38]. The Agreement covers copyrights, trademarks, patents, industrial designs, geographical indications, layout designs of integrated circuits, and undisclosed information or trade secrets[39].

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[32] WOOJUNG JON & SUNG-PIL PARK, *Comparative Analysis of Trademark Protection in the Metaverse and Registration of Virtual Goods and NFTs*, 57 COMPUT. L. & SEC. REV. 106137 (2025).
[33] TAMIKO ROCHELLE FRANKLIN, *Virtual Property: Virtual Goods, Virtual Works and Virtual Intellectual Property Rights*, VIRTUAL INTELLECTUAL PROP. ORG. INC. (Feb. 2, 2024).
[34] KASTURI DAS, *Protection of India's "Geographical Indications": An Overview of the Indian Legislation and the TRIPS Scenario*, RESEARCHGATE (2006), researchgate.net.
[35] PARIS CONVENTION FOR THE PROTECTION OF INDUSTRIAL PROPERTY, Mar. 20, 1883, as last revised at Stockholm, July 14, 1967, 828 U.N.T.S. 305.
[36] MADRID AGREEMENT FOR THE REPRESSION OF FALSE OR DECEPTIVE INDICATIONS OF SOURCE ON GOODS, Apr. 14, 1891, as last revised at Lisbon, Oct. 31, 1958.
[37] LISBON AGREEMENT FOR THE PROTECTION OF APPELLATIONS OF ORIGIN AND THEIR INTERNATIONAL REGISTRATION, Oct. 31, 1958, as revised at Stockholm, July 14, 1967.
[38] AGREEMENT ON TRADE-RELATED ASPECTS OF INTELLECTUAL PROPERTY RIGHTS art. 68, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299.
[39] *TRIPS Agreement, R.K. DEWAN & CO., rkdewan.com (last visited Oct. 12, 2026).*

Under Article 22-24 of TRIPS agreement deals with protection of Geographical Indications and its standards. These provisions recognize the relation between geographical origin and quality reputation or other characteristics of goods. Few examples of GIs are Darjeeling Tea, Kanchipuram Silks Mysore Silk, Madhubani Paintings, Kolhapuri chappals etc[40],. Geographical indication is protected in order to protect the commercial interests of local producers by preventing unauthorized copies, assures consumers that they are buying authentic goods with specific quality standards and it also helps to preserve the traditional manufacturing and agricultural methods tied to specific regions[41].

India being signatory of TRIPS agreement has implemented the agreement specifically concerning GIs by enacting *"Geographical Indications of Goods (Registration and Protection) Act, 1999"*[42]. The act provides for registration and protection of GIs, including infringement, civil remedies, penalties and institutional mechanisms necessary for protection of GIs in India[43].

However, the development of GI protection under international and domestic legal framework focuses on identifiable goods and their geographical origins, with the emergence of the Metaverse raises question about the application of existing GI protection to virtual environments as the use of GI tag in virtual environment can mislead consumers about geographical origin or the producers of the goods. This raises questions regarding the definition of "goods" under Section 2(1) (f) of Act and whether such use may constitute as infringement under Section 22 of the Act.

[40] MAHEK PANJWANI, *Challenges in the Digital Age: Online Counterfeiting of GI Products*, IPLINK ASIA (July 24, 2024), https://www.iplink-asia.com/article-detail.php?jurisdictions=7&id=1175.
[41] ADITI KAUSHIK & DR. AMITESH, *Geographical Indications: Legal Protection and Regulatory Systems*, ANU BOOKS J. 116 (2023), https://anubooks.com/uploads/session_pdf/178230276513.%20Aditi%20Kaushik,%20Dr%20Amitesh%20116-127.pdf.
[42] JAYANTA GHOSH ET AL., *Geographical Indication (GI) Laws in India and Its Implementation: A Critical Appraisal*, 30 J. INTELL. PROP. RTS. 304 (2025).
[43] Bhanu Tanwar, *Legal Implications of Geographical Indications in India*, ResearchGate (June 2024), https://www.researchgate.net/publication/381827898_Legal_implications_of_geographical_indications_in_India.

B. Geographical indication under Agreement on Trade- Related Aspects of Intellectual Property Rights (TRIPS)

Article 22-24 of TRIPS agreement deals with protection of Geographical Indications and its standards[44]. Geographical indication is a sign used on products that have specific geographical origin and possess qualities, a reputation or characteristics that are essentially attributable to that place of origin[45].

Article 22 provides for Protection of Geographical Indications[46]. It establishes the general standards for Geographical indications. It defines Geographical indication as an indication which identifies a good as originating in the territory, a region or locality in that territory, with a given quality, reputation or other characteristic of the good which essentially is attributable to its geographical origin[47]. The provision also requires members to provide legal means to prevent infringement of GIs that misleads public regarding the Geographical origin of goods or unfair competition[48]. Article 22 is relevant for this study as it lays down the foundational standard protection of GIs in international level[49]. Although Article 22 establishes general standards for GI protection, it does not expressly address the specific issues arising from the use of protected Gis in virtual environments, this raises question about how its existing standard may apply to digital representations and virtual marketplaces.

Article 23 provides additional protection for Geographical Indications identifying wines and spirits[50]. Article 23.1 requires Members to provide the legal means for

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[44] AGREEMENT ON TRADE-RELATED ASPECTS OF INTELLECTUAL PROPERTY RIGHTS arts. 22–24, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299.

[45] VARUN SHUKLA, *Historical Development of Geographical Indication Law Under International Arena*, 2 INT'L J. L., no. 4, July 2016, at 1, 1–2, https://www.lawjournals.org/assets/archives/2016/vol2issue4/2-5-16-949.pdf.

[46] AGREEMENT ON TRADE-RELATED ASPECTS OF INTELLECTUAL PROPERTY RIGHTS arts. 22–24, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299.

[47] *Id.*

[48] *SCHOOL OF LEGAL EDUCATION, Geographical Indications (Aug. 2019),* https://www.schooloflegaleducation.com/wp-content/uploads/2019/08/Geographical-Indications.pdf

[49] *Intellectual Property: Technical Cooperation – Key Documents: V. Geographical Indications*, WORLD TRADE ORG., wto.org (last visited Oct. 12, 2026).

[50] AGREEMENT ON TRADE-RELATED ASPECTS OF INTELLECTUAL PROPERTY RIGHTS arts. 22–24, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299.

interested parties to prevent the use of a geographical indication identifying wines for wines, or spirits for spirits, not originating in the place indicated by the geographical indication in question, even where the true origin of the goods is indicated, the geographical indication is used in translation, or it is accompanied by expressions such as "kind", "type", "style" or "imitation" or the like[51]. Article 23 is relevant to this study because it extends protection beyond the misleading use test applicable under Article 22 and establishes differentiated levels of protection according to the category of goods. Although Article 23 provides additional protection for GIs identifying wines and spirits, it does not expressly address their use in virtual environments. This raises the question of how its additional protection may apply to digital representations of such goods in the Metaverse.

Article 24 provides for International Negotiations; Exceptions addresses further negotiations on GI protection and provides exceptions to certain Gi protection obligations[52]. It includes exceptions such as continued use of certain terms relating to wines and spirits, use of generic term and certain personal names subjected to conditions specified in Article. This article particularly deals with international cooperation and limitations on GI protection on an international level. This article identifies certain exceptions for use of GIs such as prior uses, earlier trademarks obtained in bona fide interest, generic terms and the use of personal or business names which does not mislead the public regarding the products. It also highlights a point where the GI is no longer protected when its disused or no longer protected in the country of origin[53].

These provisions demonstrate that the protection is not absolute and must operate within the framework of international trade and intellectual property law[54]. Article 24

[51] *Id.*
[52] *Id.*
[53] OINDRILA ROY MUHURI, *An Analysis on Overlapping of Geographical Indication and Trademark*, 5 INT'L J. L. MGMT. & HUMANITIES 191 (2022), https://ijlmh.com/wp-content/uploads/An-Analysis-on-Overlapping-of-Geographical-Indication-and-Trademark.pdf?pdf=1.
[54] AMANDINE GARDE & GREGORY MESSENGER, *The Protection of Intellectual Property and the Trade Regime*, *in* PUBLIC HEALTH AND INTERNATIONAL ECONOMIC LAW: PREVENTING NON-COMMUNICABLE DISEASES AND PROMOTING BETTER HEALTH FOR ALL 133 (2024), https://bristoluniversitypressdigital.com.

is relevant to metaverse because virtual marketplaces involve cross-border users, platforms or transactions. These exceptions hence raise question regarding the applicability of law, prior rights, generic terms and enforcement of GIs in virtual environment such as Metaverse.

Altogether Article 22, 23 and 24 establish the international framework for GI protection through general standards, additional protection for wines and spirits and specified exceptions however, these articles do not adequately address use of GIs and its infringement in virtual environment or the Metaverse.

C. India's approach towards Protection of GIs

India enacted the *"Geographical Indications of Goods (Registration and Protection) Act, 1999"*, which was made in order to implement TRIPS agreement in India. It carries out provisions regarding registration and protection of GIs in India[5556]. The Act establishes a registration system and provides rights and remedies for the registered users of GIs. The Act also covers the infringement of GIs, civil remedies and criminal offences.[57]

This study focuses on three provisions of the Act: Section 2(1)(e) and Section 2(1)(f), which define "geographical indication" and "goods" respectively, and Section 22, which governs infringement. The Act is relevant to this study because its application to the Metaverse depends upon the interpretation of the statute[58]. Section 2 of the Act contains the definitions and the rules of interpretation.

The statutory definition of geographical indication is given under the Section 2(1) (e) of the Act. It is defined as- *"geographical indication", in relation to goods, means an*

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[55] The Geographical Indications of Goods (Registration and Protection) Act, 1999, No. 48, Acts of Parliament, 1999 (India).

[56] *ANJELA RAJEEV, Geographical Indications of Goods (Registration and Protection) Act, 1999, IMPRI IMPACT & POL'Y RSCH. INST. (Feb. 15, 2024),* https://www.impriindia.com/insights/policy-update/policy-update-geographical-indications-of-goods-registration-and-protection-act-1999/.

[57] *The Geographical Indications of Goods (Registration and Protection) Act, 1999 (GI Act)*, LAWYERSCLUBINDIA (Oct. 14, 2021), https://www.lawyersclubindia.com/articles/the-geographical-indications-of-goods-registration-and-protection-act-1999-gi-act--14372.asp.

[58] NIHAL GOVIND T., *Need for a Legislative Framework for Virtual Goods and Properties Brought in India Through the Metaverse*, 2 INT'L J. LEGAL RES. & ANALYSIS, no. 7, Oct. 2024, at 44, https://www.ijlra.com/details/need-for-a-legislative-framework-for-virtual-goods-and-properties-brought-in-india-through-the-metaverse-by-nihal-govind-t.

indication which identifies such goods as agricultural goods, natural goods or manufactured goods as originating, or manufactured in the territory of a country, or a region or locality in that territory, where a given quality, reputation or other characteristic of such goods is essentially attributable to its geographical origin and in case where such goods are manufactured goods one of the activities of either the production or of processing or preparation of the goods concerned takes place in such territory, region or locality, as the case may be. Explanation. — For the purposes of this clause, any name which is not the name of a country, region or locality of that country shall also be considered as the geographical indication if it relates to a specific geographical area and is used upon or in relation to particular goods originating from that country, region or locality, as the case may be;[59]

Section 2(1) (e) defines a Geographical Indication as an indication which identifies goods originating or being manufactured in any territory, or region, or locality within a territory, where a given quality, reputation or other characteristic of the goods is attributable to that of place of origin of the goods. This provision establishes relationship between three elements, that is;

1. Geographical origin
2. Goods
3. Quality, Reputation or other Characteristics

This relationship forms the basis for GI protection under Indian law. GIs are normally associated with physical goods whose quality, reputation or other characteristics are connected to the geographical region particularly where the good is produced or manufactured. This relationship is at stake when GI is used purely for a virtual product, where it becomes necessary to consider - Whether the virtual products satisfy the statutory meaning of "goods" and whether its qualities, reputation or characteristics can meaningfully be attributed to a geographical origin in the virtual environment?

The statutory definition of goods is given under the Section 2(1) (f) of the Act. It is defined as-

[59] The Geographical Indications of Goods (Registration and Protection) Act, 1999, § 2(1)(e), No. 48, Acts of Parliament, 1999 (India).

"goods" means any agricultural, natural or manufactured goods or any goods of handicraft or of industry and includes food stuff;[60]

The meaning of "goods" is particularly important for this study because the GI is connected to goods originating from a particular geographical region.

Under the Act, it is defined as simple as any agricultural, natural or manufactured goods or any goods which are handcrafted or of industry, which also includes food items[61]. Few instances of GI tagged goods that are well known are:

1. Agricultural products with GI tag - Darjeeling tea, Basmati Rice, Alphonso Mang
2. Natural products with GI tag - Makrana Marble, Chunar Sandstone, Ambaji White Marble
3. Manufactured products with GI tag – Mysore Sandal Soap, Kannauj Perfume, Feni
4. Handicraft or Industry products with GI tag – Thanjavur Art Plate, Aranmula Kannadi, Madhubani Paintings
5. Food products with GI tag – Palani Panchamritham, Odisha Rasagola, Kashmir Saffron

Going by the definition under the statute, most of the items that come under the definition of "goods" are physical in nature.

With the advent of virtual goods, an important interpretative question arises, namely whether a purely virtual product can be treated as "goods" under the GI Act, 1999. The Act does not create a Metaverse-specific category of goods that are purely virtual in nature. This question is examined in section 2.6 below.

[60] The Geographical Indications of Goods (Registration and Protection) Act, 1999, § 2(1)(f), No. 48, Acts of Parliament, 1999 (India).
[61] B. Shafiulla, *Protection of Geographical Indications (GIs) In India*, 6 Prabandhan: Indian J. Mgmt., no. 3, March 2013, at 5, 5–6, https://www.indianjournalofeconomicsandresearch.com/index.php/pijom/article/download/59977/46915/93049.

GI Act, 1999, provides for the protection to GIs through registration and establishes rights for the authorized users. Section 22 deals of the Act deal with Infringement of GI.

Section 22 states Infringement or registered geographical indications**.** Infringement in simple terms means an action that is against a law[62] . This provision identifies circumstances in which a registered GI is infringed. These includes the unauthorized use of GI manner that misleads consumers about geographical region of the goods, act of unfair competition, and other specified forms of misleading using GI.

Section 22 is hence relevant for this study because it raises concern about the unauthorized use of GI to mislead the consumers as well as to, what constitutes infringement in virtual environment, as not every use of GI tag is considered as infringement automatically. This shall depend on the nature of the product, the purpose of use of GI by which the applicability of the statutory provisions would have to be examined by judiciary on case-by-case basis.

D. Metaverse and GI

As described in Chapter I, the Metaverse provides an immersive, multi-user virtual environment in which individuals and businesses interact, communicate and transact. Although the term is used widely, no universally accepted legal definition of the Metaverse exists[63][64]. The Metaverse is relevant to this study because it creates virtual commercial environments in which products are represented, promoted and exchanged[65]. It also creates opportunities for GI producers, since a traditional GI product may be promoted through virtual exhibitions, digital stores or virtual representations. Such promotion may, however, enable unauthorised persons to use GI names without any connection to the producers of the genuine GI product. This

[62] *Infringement, CAMBRIDGE DICTIONARY, cambridge.org (last visited Oct. 12, 2026).*
[63] DAVY TSZ KIT NG, *What Is the Metaverse? Definitions, Technologies and the Community of Inquiry*, 38 AUSTRALASIAN J. EDUC. TECH. 190 (2022).
[64]J.D.N. DIONISIO, W.G. BURNS & R. GILBERT, *3D Virtual Worlds and the Metaverse: Current Status and Future Possibilities*, 45 ACM COMPUT. SURV., no. 3, 2013, at 1.
[65] NITIN RANE, SAURABH CHOUDHARY & JAYESH RANE, *Metaverse Marketing Strategies: Enhancing Customer Experience and Analysing Consumer Behaviour Through Leading-Edge Metaverse Technologies, Platforms, and Models*, SSRN ELEC. J. (Dec. 8, 2023), https://ssrn.com.

creates tension between digital commercial transactions and the protection of GIs against unauthorised use, that is, the infringement of GIs in virtual environments.

Virtual goods can be defined as digitally created products that can be only used in digital environment and does not have connection with the physical market. Virtual goods are intangible in nature that is created once and sell over and over without needing any physical inventory to store it. In the context of this study, virtual goods may include virtual representations of products associated with a particular geographical region.

Virtual environment may display a GI product or use name of a registered GI and derive economic benefit from the same. The question here is not merely whether the use of GI name is infringement rather whether such virtual goods fall within the statutory definition of "goods" under 2(1) (f) and whether such unauthorized use of virtual goods representing may constitute as infringement under section 22 of the Act?

There can be two possible situations in representation of GIs in virtual environment;

1. A GI authorized user using the GI name to genuinely promote the actual physical GI product in the virtual environment
2. An unauthorized person representing GI name without authorization and who has no connection to virtual GI product originating form a particular GI region and it ends up misleading the public.

The second possible situation is concerning as GI Act, 1999, states that GI protection includes preventing public from being misled about a GI product especially the geographical region from where the product originates. However, whether such use constitutes infringement depends on requirements specified under Section 22 of the Act and circumstances of the case.

1. Virtual Marketplaces and GIs infringement.

Virtual marketplaces is a platform based on digital technologies in so called virtual space or cyberspace which makes it possible for supply and demand for certain goods

to come together[66]. The connection between GI producers and Virtual marketplaces is that it creates new opportunities to the GI producers to enter new markets, however such opportunities can also lead to unauthorized use of GI names[67]. The problem arises when the public are unable to determine whether a virtual product in the virtual marketplace is genuinely associated with the GI[68].

Another significant issue is determining what constitutes as "use" of GI in virtual environment. In traditional market, use can be constituted as the use of GI names to goods, packaging, advertising or commercial documents. In virtual environment, use may occur through username, product titles, metadata, virtual packaging, or virtual representations[69].

Not every digital reference of GI can be necessarily treated as infringement. It is therefore necessary to distinguish between authorized commercial use, such as promoting genuine GI products, and misleading use that falsely suggests a geographical origin. The context, purpose and nature of the use, together with the applicable statutory requirements under Section 22 of the Act is to be considered.

E. Major Legal Challenges

The first major challenge is to check Whether purely digital products will fall within the scope of Section 2(1)(f). If the term "goods" is interpreted strictly according to the statutory definition in the Geographical Indications of Goods (Registration and Protection) Act, 1999, the scope of the Act is narrow and extends only to physical products, which would exclude purely virtual goods. With the emergence of the Metaverse and of virtual marketplaces, there is pressure to read the statute more broadly in order to respond to emerging forms of digital commerce. Any such

[66] JÖRN LENGSFELD, DIGITAL ERA FRAMEWORK (2019).
[67] GAURI SINGAL, *Geographical Indications in the Digital Marketplace: Legal Challenges and Enforcement in India*, CSRIPR NUSRL BLOG (July 4, 2025), wordpress.com.
[68] NITTU, *Issues and Challenges to Geographical Indications in the Era of E-Commerce*, 11 INT'L J. INNOVATIVE RES. TECH., no. 4, Sept. 2024, at 418.
[69] *TRANSFORMING DIMENSION OF IPR: CHALLENGES FOR NEW AGE LIBRARIES (Priya Rai et al. eds., 2015)*, https://nludelhi.ac.in/download/publication/2015/Transforming%20Dimension%20of%20IPR%20-%20Challenges%20for%20New%20Age%20Libraries.pdf.

interpretation must nonetheless remain consistent with the statutory language and with the purpose of the Act.

In "*Tea Board India vs. ITC Limited (Calcutta High Court, 2011)",* the Tea board challenged ITC's use of the name "Darjeeling Lounge" for a hotel lounge, relying on its geographical indication for Darjeeling tea[70]. The court did not grant the injunction sought by the Tea board. The case is relevant because it raises questions about the relationship between GI protection and the goods for which protection is claimed. However, it did not address whether purely digital products fall within the definition of "goods" under Section 2(1) (f) of the Act.

The statutory question is sharpened by contrasting the two Indian definitions. Section 2(1)(f) of the GI Act anchors "goods" to agricultural, natural or manufactured goods, goods of handicraft or of industry, and foodstuff, and Section 2(1)(e) further requires, in the case of manufactured goods, that one of the activities of production, processing or preparation take place in the named territory. Section 2(1)(j) of the Trade Marks Act, 1999, by contrast, defines "goods" expansively as anything which is the subject of trade or manufacture[71]. The narrower GI definition is deliberate, because the GI right rests upon a territorial link between the product and its place of origin which the trade mark right does not require.

In *Tata Consultancy Services v. State of Andhra Pradesh*, the Supreme Court held that canned software is "goods" because it is capable of being abstracted, stored, possessed, transmitted and sold[72]. That reasoning, however, arose under an inclusive sales tax definition and turned upon marketability rather than upon origin. It cannot be transplanted without qualification to Section 2(1)(f), because the GI Act ties the manufactured goods limb to an act of production, processing or preparation occurring within a defined territory. A purely virtual item, which is coded and replicated without any territorial act of production, does not satisfy that requirement.

[70] *Tea Board, India v. ITC Ltd., 2011 (48) PTC 169 (Cal).*
[71] The Trade Marks Act, 1999, § 2(1)(j), No. 47, Acts of Parliament, 1999 (India).
[72] Tata Consultancy Servs. v. State of Andhra Pradesh, (2005) 1 SCC 308 (India).

Three situations must therefore be distinguished. First, where a physical GI product is listed, displayed or sold through a virtual marketplace, the subject matter remains physical goods and Section 2(1)(f) is plainly satisfied. Secondly, where a virtual replica of a GI product is offered as a digital asset in its own right, the item lacks the territorial production required by Section 2(1)(e) and does not qualify as "goods" under the Act. Thirdly, where a GI name is merely borrowed as a brand for an unrelated virtual item, there is no qualifying product at all, and the GI Act can have no application to the item itself.

This conclusion does not leave GI holders without protection in the second and third situations. Section 22(1)(a) is engaged by the use of a registered GI by any means in the designations or presentation of goods, so that online listings, titles and promotional material relating to physical GI goods fall within the provision even where purely virtual items do not[73]. Section 2(3) further provides that a reference to the use of a geographical indication is a reference to the use of a printed or other visual representation of it, and that use in relation to goods includes use in any physical or other relation whatsoever to such goods, which is language wide enough to accommodate digital representation[74]. Where the Act does not apply, an action for passing off preserved by Section 20(2), certification trademarks under the Trade Marks Act, 1999, and the prohibition of misleading advertisements under the Consumer Protection Act, 2019 remain available to the registered proprietor and the authorised users.

The second challenge is to see Whether Section 22 can be applied when GI is used in purely virtual product. The GI Act, 1999, was not specifically drafted for the Metaverse, therefore its application depends upon whether the relevant virtual activity falls within its existing legal concepts. The applicability of Section 22 depends on whether when the virtual use of GI was unauthorized. However, the absence of express digital terminology creates ambiguity.

[73] The Geographical Indications of Goods (Registration and Protection) Act, 1999, § 22(1)(a), No. 48, Acts of Parliament, 1999 (India).
[74] The Geographical Indications of Goods (Registration and Protection) Act, 1999, § 2(3), No. 48, Acts of Parliament, 1999 (India).

GI protection under Section 22 also talks about preventing misleading representation concerning geographical origin. In virtual marketplaces, customer may be located in a different place than that of the geographical region associated with GI product, which limits the customers' ability to verify the authenticity of a digital product. For instance, a seller in virtual marketplace uses a recognized GI name by creating an impression that the use of GI has been authorized by producers relevant to geographical region. Such misrepresentation raises a question on the reputation associated with the GI as it misleads the customer.

In the "*Scotch Whisky Association vs Golden Bottling Limited (Delhi High Court, 2006)" the* dispute concerned the use of name "Red Scot" for whisky that was not Scotch whisky[75]. The case illustrates the legal concern arising when a products name creates misleading impression about its geographical origin. The similar concern may arise when a protected GI is used to suggest a geographical association with a virtual product. However, the case did not concern the Metaverse or determine the application of Section 22 to purely virtual goods.

The third challenge here is that GI Infringement generally occurs within territorial markets which can be identifiable in nature. The Metaverse is a space which is more geographically dispersed in nature. Jurisdiction in the metaverse can be complex, as virtual worlds and online communities can cross international boundaries and involve multiple legal systems[76]. A seller in one country by using platform may operate from another country, the relevant GI may originate from another country and the consumer may be located somewhere else. This creates difficulty in understanding;

1. Which court has jurisdiction
2. Which country's law will apply
3. Where the infringement happened
4. How to enforce an order against a foreign infringer[77].

[75] *Scotch Whisky Ass'n v. Golden Bottling Ltd.*, 2006 (32) PTC 656 (Del).
[76]N.J. GERVALSIS, *From Laws for Cyberspace to Cyber Laws (Literally): Integration of Legal Norms into Internet Protocols and Law for Closed Digital Management Communities*, 1 SCRIPT-ED 259 (2004).
[77] ELEONORA ROSATI, *The Localization of IP Infringements in the Online Environment: From Web 2.0 to Web 3.0 and the Metaverse*, 18 J. INTELL. PROP. L. & PRAC. 720 (2023).

Therefore, GI protection encounters additional practical difficulties in Metaverse[78].

The fourth legal challenge is that the Digital platforms permit users to operate under anonymous usernames or pseudonyms. Where a GI owner identifies an infringing GI digital merchandise but cannot identify the user responsible for such infringement, which makes it difficult for enforcement. Therefore, it is necessary to obtain information from platforms, preserving digital evidence and identifying actual operator. Virtual marketplaces may not themselves infringe rather the users may upload or sell infringing digital GI products.

1. **Forum and jurisdiction:** Indian law is not silent on these questions. Section 66 of the GI Act requires that a suit for the infringement of a registered geographical indication, or for passing off, be instituted before a court not inferior to a District Court, and Section 66(2) permits the suit to be filed where the registered proprietor or the authorised user resides or carries on business[79]. On online conduct, the Delhi High Court held in *Banyan Tree Holding (P) Ltd. v. A. Murali Krishna Reddy* that the mere accessibility of a website within the forum does not confer jurisdiction, and that the plaintiff must establish purposeful availment, namely that the defendant specifically targeted the forum and that such targeting resulted in injury to the plaintiff[80]. In *World Wrestling Entertainment, Inc. v. M/s Reshma Collection*, the Court held that an interactive website through which transactions are concluded with customers within the forum amounts to carrying on business there[81]. Applied to the Metaverse, these tests direct attention to whether the virtual storefront is accessible to, priced for and transacted with Indian consumers, rather than to the physical location of the server.

[78] KISLAY SONI & DEEKSHA SINGH, *Virtual Goods and Digital Designs: A Case for Sui Generis IP Protection in India*, 31 J. INTELL. PROP. RTS. 724 (2026).
[79] The Geographical Indications of Goods (Registration and Protection) Act, 1999, § 66, No. 48, Acts of Parliament, 1999 (India).
[80] Banyan Tree Holding (P) Ltd. v. A. Murali Krishna Reddy, 2010 (42) PTC 361 (Del.) (India).
[81] World Wrestling Entm't, Inc. v. M/s Reshma Collection, 2014 SCC OnLine Del 2031 (India).

2. **Platform liability:** Virtual marketplaces are intermediaries within the meaning of Section 2(1)(w) of the Information Technology Act, 2000, and may claim the safe harbour under Section 79 of that Act, subject to the due diligence obligations imposed by the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021[82]. In *Christian Louboutin SAS v. Nakul Bajaj*, the Delhi High Court held that a platform which actively participates in the transaction, by authenticating products, charging a membership fee and promoting the mark, ceases to be a passive conduit and forfeits the exemption[83]. That reasoning applies with equal force to a virtual marketplace which curates, authenticates or promotes GI-branded digital merchandise.
3. **Unidentified defendants:** Anonymity does not defeat enforcement. Section 67(2) of the GI Act empowers the court to grant an ex parte injunction and interlocutory orders for the discovery of documents and for preserving infringing goods, documents or other evidence relating to the subject matter of the suit[84]. These powers enable a proprietor to compel a platform to disclose subscriber information and to preserve server logs before the infringer dissipates them. In *UTV Software Communication Ltd. v. 1337X.to*, the Delhi High Court developed the dynamic injunction, which permits a rights holder to extend a blocking order to mirror and redirect websites without instituting fresh proceedings, and applied John Doe principles to unidentified operators[85]. The same technique can address the repeated re-uploading of infringing virtual goods under successive pseudonyms.
4. **Comparative practice:** In *Hermès International v. Rothschild*, a jury in the United States District Court for the Southern District of New York returned a verdict in February 2023 finding that non-fungible tokens bearing the

[82] The Information Technology Act, 2000, §§ 2(1)(w), 79, No. 21, Acts of Parliament, 2000 (India); Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021, Gazette of India, pt. II sec. 3(i) (Feb. 25, 2021).
[83] Christian Louboutin SAS v. Nakul Bajaj, 2018 SCC OnLine Del 12215 (India).
[84] The Geographical Indications of Goods (Registration and Protection) Act, 1999, § 67(2), No. 48, Acts of Parliament, 1999 (India).
[85] UTV Software Commc'n Ltd. v. 1337X.to, 2019 SCC OnLine Del 8002 (India).

MetaBirkins name infringed and diluted the plaintiff's trademarks, and the District Court granted a permanent injunction in June 2023. An appeal to the United States Court of Appeals for the Second Circuit was argued in October 2024 and remains pending[86]. The verdict confirms that identifiers associated with physical goods may be enforced against purely virtual offerings, although it rests upon trade mark law, which does not impose the territorial production requirement that is central to the GI Act.

The fifth legal challenge concerns remedies. The GI Act, 1999, provides both civil and criminal mechanisms. The civil remedies under Section 67 are an injunction and, at the option of the plaintiff, either damages or an account of profits, together with or without an order for the delivery-up of the infringing labels and indications for destruction or erasure, and the court may grant ex parte and interlocutory orders under Section 67(2)[87]. Such suits are instituted before a court not inferior to a District Court under Section 66.

The criminal provisions are contained in Sections 38 to 42. Falsifying or falsely applying a geographical indication under Section 39, and selling goods to which a false geographical indication is applied under Section 40, are punishable with imprisonment of not less than six months and up to three years, and with a fine of not less than fifty thousand rupees and up to two lakh rupees. Section 41 enhances this, on a second or subsequent conviction, to imprisonment of not less than one year and up to three years, and a fine of not less than one lakh rupees and up to two lakh rupees[88].

The Act does not provide compensation as a criminal penalty. With effect from 1 August 2024, the Jan Vishwas (Amendment of Provisions) Act, 2023 decriminalised Section 42, which now attracts only a monetary penalty adjudicated under Sections

[86] Hermès Int'l v. Rothschild, No. 1:22-cv-00384 (S.D.N.Y.) (jury verdict Feb. 8, 2023; permanent injunction June 23, 2023), appeal docketed, No. 23-1081 (2d Cir. July 21, 2023) (argued Oct. 23, 2024; decision pending).
[87] The Geographical Indications of Goods (Registration and Protection) Act, 1999, § 67, No. 48, Acts of Parliament, 1999 (India).
[88] The Geographical Indications of Goods (Registration and Protection) Act, 1999, §§ 38–41, No. 48, Acts of Parliament, 1999 (India).

37A and 37B, and omitted Sections 43 and 44[89]. Since the surviving offences all involve the falsification or false application of a geographical indication, the amendment confines criminal exposure to deliberate counterfeiting and shifts the practical incentive for GI holders towards civil enforcement. Enforcement in the Metaverse nonetheless remains difficult and may require technological measures. The potential enforcement difficulties include;

1. Removal of infringed digital content
2. Preservation of digital evidence
3. Identification of anonymous users
4. Enforcement against overseas entities
5. Repeated uploading of infringing material

   The existing statutory remedies cannot necessarily be implemented in the Metaverse with the same effectiveness as in the physical market.

F. Findings

Based on the doctrinal analysis, the following findings have been identified

1. The existing GI framework provides legal foundation for registering and protection of Geographical Indication. However, the Statute does not expressly provide for the new challenges created by Metaverse in the field of GI protection and its infringement in virtual environments.
2. The statutory definition of "goods" under Section 2(1)(f) of the GI Act, 1999, is narrower than the definition in Section 2(1)(j) of the Trade Marks Act, 1999, and is tied by Section 2(1)(e) to production, processing or preparation within a defined territory. A purely virtual item created and replicated without any territorial act of production therefore falls outside the statutory definition, notwithstanding the reasoning in Tata Consultancy Services v.

[89] The Jan Vishwas (Amendment of Provisions) Act, 2023, § 2 & sch., No. 18, Acts of Parliament, 2023 (India) (w.e.f. Aug. 1, 2024), omitting §§ 43–44 and substituting § 42(2) of the Geographical Indications of Goods (Registration and Protection) Act, 1999, which now provides for a penalty of one-half per cent. of total sales or turnover or five lakh rupees, whichever is less, adjudicated under §§ 37A and 37B.

State of Andhra Pradesh, which arose under an inclusive sales tax definition and turned upon marketability rather than origin.

3. Section 22 continues to apply where a registered GI is used in the designations or presentation of physical GI goods, including in online listings, titles and promotional material within virtual marketplaces. It does not apply to a purely virtual item which is not "goods" under the Act, and for which passing off, certification trademarks and consumer protection law provide the alternative routes. Not every digital reference to a GI amount to infringement.
4. Metaverse in nature is borderless which makes it difficult to understand the jurisdiction and apply relevant law.
5. The remedies under GI Act, 1999, can be easily applied in real market but in a virtual marketplace application of such civil and criminal remedies under the statute will not be equally effective as against rapidly evolving digital infringement.

G. Discussion

The doctrinal analysis points out that the central challenge is not complete absence of legal protection of GI names and products in the virtual environment such as Metaverse, rather the uncertainty regarding the applicability of existing legal framework to new emerging virtual marketplace.

GI Act, 1999, was designed in order to protect the goods associated with particular geographical origin in real market, whereas Metaverse allows commercial activity which involves digital marketing that may not have any physical existence. This creates a fundamental question regarding the concept of "goods" under Section 2(1)(f) of GI Act, 1999. For instance, purely virtual goods fall within the scope of GI framework remains uncertain. However, a technological-neutral interpretation could expand the scope of law and extend its arms in protecting GI even in Virtual Marketplace, by examining the purpose of the goods which are represented, marketed or sold in such environments.'

The second major issue that concerns revolves around applicability of Section 22 of GI Act, 1999, which deals with infringement of GI goods which include preventing the use of GI tag and misleading the customers about the geographical association of the product from its actual place of origin. However, use of all GI name appearing in any virtual environments such as Metaverse does not automatically lead to infringement, for which we need to legally analyse the user who used GI tag in such environments and also the purpose of such representation concerning geographical origin of the goods.

Territoriality is another important issue in Metaverse, Geographical Indications are associated with a particular geographical region, whereas Metaverse allows cross-border transaction across different territories, resulting in tension between territorial intellectual property rights and borderless digital commerce which makes jurisdiction and enforcement important.

The study therefore indicates that the Indian GI framework is capable of addressing certain forms of Metaverse related GI misuse through existing legal principles, but still remains uncertain. Hence, the uncertainty that exists in the GI Act, 1999, and requires attention towards the meaning of goods, its use in digital platform, cross-border enforcement and remedies for such acts happening in virtual environment.

Therefore, the hypothesis of the study that "the existing legal framework provides for the foundational protection of Geographical Indications but uncertainties remain regarding the application of the Act to purely virtual goods, infringement under Section 22 and cross- border enforcement. Hence, a balance approach is necessary, stronger GI protection is important in order to prevent its misuse and reputational interests of authorized GI producers. At the same time, it is important to note that not all GI tag usage in virtual environments attribute to Infringement, hence there is to be examination of the use of GI in such virtual environments, it is to not restrict legitimate commercial promotion and other lawful forms of digital use of GI. Therefore, it is much necessary to examine the purpose, context, nature and commercial effect of the particular representation of GI in virtual environment like Metaverse.

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The analysis hence suggest that the existing GI framework should not be viewed as completely incapable of addressing the emerging technological advancement rather several principles contained in the statute are sufficiently broad enough to provide a foundation for addressing such digital misuse.

The absence of express provisions relating to virtual goods, digital merchandise and virtual marketplaces creates uncertainty which effects both GI producers' reputation and digital business and its legal boundary of digital commercial activity. The main legal question remains with the interpretation of "goods" under Section 2(1) (f) which deals with whether purely virtual good falls under the statutory definition and whether such 'use' of GI in virtual environment falls in the ambit of Section 22. Metaverse hence has created a challenge in the existing legal framework regarding to the applicability of the GI Act, 1999, which largely deals with Traditional GI and the emerging technological advancements in which goods exist where it can be marketed and exchanged digitally.

The development of GI law will need to address the legal gap while maintaining the purpose of the GI Act, 1999, which protection of GI from preventing misleading geographical representations and protecting the interests of the authorized producers and its reputation associated with particular geographical region.

H. Recommendations and Future Directions

The following are the recommendations that are reached after analysis:

1. One of the most important issues identified in this study is the interpretation of the term "goods" under Section 2(1)(f) of the GI Act, 1999, that is, whether purely virtual goods fall under the ambit of the definition. The legislature may consider providing clarity concerning whether and to what extent purely virtual goods can fall within the ambit of the Act. The clarification shall help in distinguishing between; Physical GI products being represented digitally, Digital merchandise, purely virtual goods, Digital representations of GI products. However, any amendment must not extend beyond the purpose of the GI Act,1999.

2. The GI Act, 1999, could provide greater clarity regarding the meaning of "use" in virtual environments. In metaverse, a GI may appear in; Virtual product names, Digital packaging, Metadata, Virtual advertisement, Digital representation of physical products. Hence, clarity on when such use may amount to infringement would reduce uncertainty for authorized GI user and consumers.
3. Courts may adopt technology-neutral approach while interpreting the current GI Act. It does not automatically mean to treat every digital asset as traditional goods, rather to examine the purpose and substance of the relevant statutory provision while considering the technological context in which the infringement occurs. Such an approach can allow legal principles to remain relevant even when technologies change.
4. Traditional enforcement mechanisms face practical challenges in virtual environments, hence clarity in procedural mechanisms of obtaining and preserving such evidence could assist GI producers in pursuing legal remedies.
5. Virtual marketplaces operate across different borders; international cooperation is required for effective GI protection. Indian authorities may face challenge in locating an infringer outside the territory of India, or transactions take place through an international marketplace or the relevant digital asset is hosted or transferred across jurisdictions. Cooperation between relevant authorities and international organizations could improve the identification of infringers and enforce GI rights.
6. GI producer organizations and authorized users should be made aware of the possibility of misuse of GI in virtual environments. Government may take necessary steps to conduct awareness program and educate the producers about identifying unauthorized digital use, reporting suspected infringement, preserving digital evidences etc. This would help ensure that GI protection extends beyond the physical marketplace into emerging virtual marketplace such as Metaverse.

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The study recommends a balanced and technology neutral approach to GI protection in the Metaverse. The objective should be to ensure that the legitimate GI produces are protected against misleading and unauthorized commercial exploitation while avoiding necessary restrictions on legally acceptable virtual activities. Rather than creating an entire separate legislation for every emerging technology, the existing principles of GI protection can be interpreted in broader manner, where uncertainty still remains, legislative clarification can provide clarity.

The Metaverse presents both opportunities and challenges for Geographical Indications. The Indian legal framework supplies the foundational principles governing the protection of GIs, but clarity is still required on the treatment of purely virtual goods, digital merchandise and virtual marketplaces.

The future development should focus on providing clarity without limiting technological innovation, adopting technology-neutral judicial interpretation, digital enforcement, and international cooperation will provide effective framework in protection of GI in emerging virtual environments.

V. CONCLUSION

Geographical Indications (GIs) is an integral part of Intellectual Property protection as they connect particular goods with particular geographical region, the reputation, quality or other characteristics of such goods are associated with the geographical region from where they originate. In India, the protection of Geographical Indications is governed under the Geographical Indications of Goods (Registration and Protection) Act, 1999, whereas the international framework is provided under Article 22-24 of TRIPS agreement.

The technological advancements and emergence of Metaverse have created new forms of commerce and interaction. Virtual goods, digital merchandise, and virtual marketplaces allow GI tagged products to be represented and used in ways that were not considered when the existing GI framework was developed. The present study has examined whether the existing Indian legal framework adequately addresses such emerging forms of GI use and Infringement.

The study indicates that the existing Indian GI framework provides a foundational legal protection of Geographical Indication against unauthorized and misleading commercial usage. The GI Act, 1999, contains provisions dealing with definitions of GIs, its registration, rights of authorized users, infringement and remedies. The underlying principle in section 22 deals particularly with protection against misleading geographical representation and unfair competition, which are still relevant in commercial transactions that takes place in virtual environments such as Metaverse. However, the application of these provisions in Metaverse creates certain legal uncertainties, particularly concerning the statutory definition of "goods" under Section 2(1) (f) of GI Act, 1999.

Traditionally, GI protection is generally associated with physical goods in real market place which is identifiable and is connected to a particular geographical region. Purely virtual goods and digital assets do not possess the same physical characteristics as traditional GI products. Therefore, it's highly necessary to examine whether purely virtual goods can be interpreted within the statutory ambit.

The second major issue concerning the applicability of Section 22 dealing with infringement in particular with misleading and unfair competition, whether it can be applied to use of such GI goods in virtual environment. A person may use GI name in a virtual product, advertisement or marketplace which may create false or misleading geographical association, such conduct raises concerns similar to that of traditional GI products infringement which is already addressed under the GI Act,1999. However, merely using GI name in the virtual environment such as Metaverse does not automatically lead to Infringement, for which we need to look into the context of the representation made, purpose, its use and whether such representation actually mislead customers is to be examined.

Another important factor in the study is the issue that concerns with the territorial nature of GI protection. GIs are inherently connected to a particular geographical region, whereas virtual marketplace or the Metaverse is cross-border in nature, in the sense anyone sitting at any place worldwide can access, interact, represent, market and the consumer may be in another place from where he can purchase such GI tagged

products wherein the GI product will have no association to the region from where it is being represented in the marketplace.

Yet another factor that the study has looked into is the anonymity and pseudonymity of users which further complicates identification of infringer who represents the GI product in virtual marketplace. Obtaining relevant information and preserving the digital evidence is a major challenge in virtual environments.

The study further indicates that the civil and criminal remedies under the GI Act, 1999, are not equally effective in virtual environments, because digital infringement can occur rapidly, repeatedly and across different jurisdictions under conditions of anonymity. Conventional remedies must therefore be supplemented by technological measures if the relief available under the GI Act, 1999 is to be meaningful. The research question that the study dealt with was;

1. Whether the existing Indian legal framework is adequate enough to address the use of GI and its infringement in the Metaverse.
2. Whether purely virtual goods fall under the statutory definition of "goods" under the *"Geographical Indications of Goods (Registration and Protection) Act, 1999"*[90].
3. Whether the "use" of GI in the virtual environment constitutes infringement under Section 22 of the *"Geographical Indications of Goods (Registration and Protection) Act, 1999"*[91].

The study suggests that the existing framework only lays foundation for addressing certain forms of GI misuse in virtual environments, but its application to Metaverse is still not free from legal uncertainty. The uncertainty arises from the fact that GI Act, 1999, does not have express provisions to address purely virtual goods, digital merchandise or virtual marketplace. The applicability of the Act therefore depends on the interpretation of existing statutory concept particular "goods" and "use".

[90] The Geographical Indications of Goods (Registration and Protection) Act, 1999, No. 48, Acts of Parliament, 1999 (India).
[91] *Id.*

Issue is not simply Whether the GI Act, 1999, applies or does not apply to Metaverse, rather the applicability may differ accordingly to the nature of the digital activity. For instance, an authorized user of GI using virtual platform to genuinely promote the GI product cannot be treated as infringement whereas an unauthorized person representing GI product falsely and misleading customers regarding the associated geographical region with the GI product leads to Infringement. Hence, this distinction shows the importance of the context based on which the GI product is used in the virtual environment and how the remedies need to adapt technology-neutral approach.

Articles 22-24 of the TRIPS agreement lays down the international foundation for GI protection, wherein Article 22 lays down general protection of GI against misleading use and unfair competition, Article 23 provides for additional protection of GI regarding to wines and spirits which broadens the protection of products covered under GI protection and Article 24 contains exceptions and qualifications regarding GI protection. These provisions do not expressly provide for Metaverse or evolved digital marketplaces, rather they only provide for general principles regarding GI protection and its infringement.

Absence of Metaverse related provisos in TRIPS framework does not prevent domestic legal development. Hence, Indian legal framework while keeping the foundational principles of GI protection laid down in TRIPS agreement and existing GI Act, 1999, must address in regarding to the emerging digital developments such as use of GI in Metaverse and what constitutes as goods and applicability of the act in relation to its GI infringement in virtual environments.

The hypothesis proposed in this study was that "the existing legal framework provides for the foundational protection of Geographical Indications and its Infringement it may not be sufficient enough to address the emerging forms of the virtual GI infringement in the metaverse in particular to the relation to the virtual goods, cross -border infringement."

The doctrinal analysis thus supports the relevance of this hypothesis by identifying several areas of legal uncertainty. GI Act, 1999, contains protection, but question

remains concerning its application to purely virtual goods using GI tag in virtual marketplace, where there is no physical existence of such GI product in virtual market. At the same time the study does not suggest an entirely new GI legislation to be enacted rather the existing provisions can be amended and addition of Metaverse related provisions will ensure that the application of the Act is effectively used in physical market as well as in virtual marketplace.

The legal framework must ensure that the digital activity is not restricted by protecting the authorized user of GI products. Not every use of GI product in Metaverse constitute infringement, hence the context, purpose, use of GI tag and why such representation is made is to be examined.

The study concludes that the GI Act, 1999, provides for foundation of GI protection, with the emergence of Metaverse it's highly necessary to bring out legal clarity, technological awareness and effective enforcement mechanism in protection of GIs. While continuing to use the existing principles regarding the protection of GI, it's also necessary to adapt technology- neutral approach which will address the new forms of digital misuse.

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