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Terroir on Trial: The Legal Implications of Climate Change on the Validity of Geographical Indications

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Abstract

Climate change poses a fundamental challenge to the legal framework of Geographical Indications (GIs) in Indonesia, which is traditionally grounded in the assumption of terroir stability. This article examines (1) the legal validity, infringement, and potential revocation of GIs under the Indonesian Geographical Indications Law when climate change alters or undermines the environmental conditions underlying registered GIs, and (2) proposes legal adaptation strategies for the future governance of Indonesian GIs in response to climate change. This study employs a normative juridical research design using statutory and comparative law approaches. The findings indicate that (1) the current legal framework governing the validity, infringement, and revocation of GIs exhibits a deficit in the rule of recognition, as conceptualized in Hart's legal theory, particularly in addressing environmental transformations caused by climate change; and (2) legal adaptation to climate change may be advanced by incorporating several regulatory elements from the French GI regime, including (a) provisions enabling the revision of product specifications, (b) recognition of the GI management organization (Masyarakat Perlindungan Indikasi Geografis / MPIG) as a public-interest actor, and (c) the expansion of the dialogical authority of the Directorate General of Intellectual Property (DJKI).

Keywords

terroir, climate change, law, adaptation, geographical indication.

Introduction

Geographical Indications (GIs) have emerged as a significant intersection between intellectual property law, agricultural policy, and cultural preservation. Within the legal framework, GIs are designed to protect products whose quality, reputation, or specific characteristics are essentially attributable to their geographical origin. In Indonesia, the legal definition of GIs is provided in Article 1(6) of Law of the Republic of Indonesia No. 20 of 2016 on Trademarks and Geographical Indications (UU MIG). The legal protection of GIs is fundamentally rooted in the concept of terroir. The epistemic validity of terroir plays a crucial role in the social construction and institutionalization of Geographical Indications. It involves the identification of essential physical and cultural attributes that shape the distinctive characteristics of a product[1]. Physical attributes derive from natural factors such as soil, topography, and climate, whereas cultural attributes originate from human factors, including traditional knowledge and production methods. The regulation of GIs is particularly significant because it generates economic value through market differentiation while simultaneously safeguarding cultural heritage by linking it to a specific geographical origin. For example, Kopi Gayo, which has obtained GI certification, commands a higher market price than conventional coffee, illustrating the economic premium associated with GI protection. More broadly, the entire juridical architecture of GIs—both under the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) and national sui generis legislation—rests upon an implicit yet critical assumption: the relative stability of the terroir that the legal regime seeks to protect.

Climate change poses a significant challenge to the traditional concept of terroir.[2] The relationships embedded within terroir are historically premised on the assumption of relatively stable climatic conditions. However, climate change has the potential to disrupt these relationships, including those that underpin the sustainability of geographically indicated products. Shifting environmental conditions

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[1] Michael J. Zinsli, "Authorizing the 'Taste of Place' for Galápagos Islands Coffee: Scientific Knowledge, Development Politics, and Power in Geographical Indication Implementation," Agriculture and Human Values 40, no. 2 (2023): 581–597, https://doi.org/10.1007/s10460-022-10364-9.

2 William A. Kerr and Lorna F. Clark, "Are Geographical Indications Sustainable in the Face of Climate Change?" Queen Mary Journal of Intellectual Property 12, no. 2 (2022): 226–241, https://doi.org/10.4337/qmjip.2022.02.04

may alter soil characteristics, temperature patterns, and precipitation regimes, thereby affecting the ecological balance that sustains terroir-based production systems. In response to these transformations, maintaining the economic viability of geographically indicated products may require the adoption of new terroir-based production practices. Consequently, adjustments in agronomic practices may also necessitate corresponding amendments to the legal definitions and regulatory frameworks governing Geographical Indications.

The existing legal framework governing Geographical Indications (GIs), which is largely static in nature, is fundamentally inadequate to address the dynamic realities of climate change. Such rigidity not only threatens the economic interests of producer communities but also undermines the legitimacy and enforceability of the GI system itself. By failing to account for environmental volatility, the law risks creating a de facto regime of "strict liability" for producers confronted with existential climate threats. In doing so, it weakens the broader normative objective of GIs as instruments for sustainable rural development.

The concept of legal certainty articulated by H.L.A. Hart, particularly through his notion of the rule of recognition, plays a crucial role in the legal protection of Geographical Indications (GIs) associated with terroir. Hart's legal positivism emphasizes the importance of a foundational rule that establishes the criteria of legal validity based on social practices rather than moral evaluation[3]. The rule of recognition functions as the ultimate standard through which legal norms are identified and validated within a legal system. As such, it is essential for ensuring normative coherence and institutional stability—conditions that are fundamental to the effective protection and governance of GIs.

Policymakers and GI rights holders should therefore consider revising existing legal definitions to reflect evolving environmental conditions and to safeguard the economic viability of GI products in the face of climate change.

Critical questions therefore arise regarding the validity of GI status itself. If the defining characteristics of a product change, can the GI designation still be considered valid? Furthermore, adaptive innovations undertaken by producers—such as the adoption of new crop varieties or alternative cultivation techniques—may paradoxically be regarded as violations of the GI product specification. The most serious risk lies in the potential revocation of GI status if a particular

3 F. Campos, "The Inescapability of Law and the Duty of the Rule of Recognition," KRITERION – Journal of Philosophy (2025), https://doi.org/10.1515/krt-2025-0010.

region is no longer able to produce goods that conform to the original definition. Addressing these challenges requires not only identifying the emerging legal crisis but also formulating forward-looking solutions. Accordingly, the central issue of this study is how to design an adaptive governance model for Geographical Indications. In this context, the concept of terroir must be reconsidered and reinterpreted as an evolving entity capable of accommodating climate-induced transformations without undermining the authenticity and protection that lie at the core of the GI system.

Previous studies have explored various dimensions of Geographical Indications (GIs) in relation to sustainability, agricultural adaptation, and governance. Agustianto et al. examined the potential of the GI system in Indonesia to support sustainable development, particularly in relation to environmental protection. Their study highlights that, despite the conceptual linkage between GIs and environmental sustainability, the current regulatory framework governing GIs in Indonesia lacks explicit normative legal support for environmental protection[4]. Similarly, A. Karim et al. analyzed farmers' coping strategies in response to climate change within sustainable Arabica coffee production, focusing specifically on the Gayo coffee sector. Their research identifies a range of adaptive strategies employed by farmers to maintain productivity and resilience in the face of climate-related challenges.[5] From a regulatory perspective, Domenico Cristallo examined the potential role of GIs in protecting livestock breeds and heritage plant varieties, particularly under the new EU Regulation 2024/1143. By emphasizing the value of terroir, the GI framework can encourage producers to preserve traditional biological resources, thereby helping to prevent genetic erosion and industrial standardization.[6] Meanwhile, Filippo Sgroi discussed how GIs can contribute to territorial public systems and local development, while

[4] Disemadi H. S. Agustianto, S. Rusdiana, and W. Tan, "Geographical Indications-Based Environmental Protection: Legal Challenges and Sustainable Development Goals Implementation in Indonesia [Perlindungan Lingkungan Berbasis Indikasi Geografis: Tantangan Hukum dan Implementasi Sustainable Development Goals]," LITIGASI 26, no. 1 (2025): 448–476, https://doi.org/10.23969/litigasi.v26i1.1914

[5] C. Nilda, D. Hasni, M. Rahmany, A. Karim, S. Syakur, and H. Hifnalisa, "Farmers Coping Strategies to Climate Change in Sustainable Arabica Coffee Production," IOP Conference Series: Earth and Environmental Science 1183, no. 1 (2023): 012097, https://doi.org/10.1088/1755-1315/1183/1/012097

[6] Dario Cristallo, "Geographical Indications and Biodiversity: An Overview of Regulatory Challenges and Critical Perspectives," New Medit 2025, no. 3 Special Issue (2025): 47–58, https://doi.org/10.30682/nm2503e

also highlighting the vulnerabilities of GI systems to various forms of market failure.[7] In a governance-oriented analysis, Emily Reisman emphasized the importance of inclusive participation and the need to address power imbalances within GI governance structures in order to achieve broader social and environmental objectives.[8]

While these studies provide valuable insights into sustainability, climate adaptation, biodiversity protection, and governance within the GI framework, they do not specifically address the legal implications of climate change for the terroir-based regulatory foundations of Geographical Indications, particularly within the Indonesian legal context. This study therefore seeks to fill this gap by examining how the legal regulation of GIs—grounded in the concept of terroir—can respond to the challenges posed by climate change, with a particular focus on the Indonesian legal framework.

This study employs a normative juridical research method using both statutory and comparative law approaches. The legal framework governing Geographical Indications (GIs) in Indonesia is critically examined through the lens of H.L.A. Hart's legal theory, particularly his concept of the rule of recognition. Based on this analysis, the study proposes legal solutions for addressing terroir-related challenges within the Indonesian GI regulatory framework. Specifically, it explores the potential adoption of selected regulatory provisions from the French GI regime as a comparative model to enhance the adaptability of Indonesia's GI governance in the context of climate change.

Legal Validity, Infringement, and Revocation of Geographical Indications under Changing Climate Conditions

A. Doctrinal Foundations of Geographical Indications (GI) Law

The legal framework governing Geographical Indications (GIs) is built upon a doctrinal foundation that assumes relative stability. This assumption serves as a central pillar supporting the legitimacy and legal certainty of the entire GI system. The international regulation of

[7] Fabrizio Sgroi, "Territorial Development Models: A New Strategic Vision to Analyze the Relationship between the Environment, Public Goods and Geographical Indications," Science of the Total Environment 787 (2021): 147585, https://doi.org/10.1016/j.scitotenv.2021.147585

[8] Erica Reisman, "Protecting Provenance, Abandoning Agriculture? Heritage Products, Industrial Ideals and the Uprooting of a Spanish Turrón," Journal of Rural Studies 89 (2022): 45–53, https://doi.org/10.1016/j.jrurstud.2021.11.003

Geographical Indications traces its origins to the Paris Convention, which represented the first international agreement to recognize protection for indications of source. The term Geographical Indications itself was later explicitly articulated in international law through the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), which established a more comprehensive framework for the protection of geographically linked products within the global intellectual property regime.

Article 22(1) of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) defines Geographical Indications as indications that identify a good as originating in the territory of a Member, or a region or locality within that territory, where a given quality, reputation, or other characteristic of the good is essentially attributable to its geographical origin. The phrase "essentially attributable" implies that this relationship constitutes a relatively stable and verifiable causal link at the time of registration. In other words, the legal recognition of a Geographical Indication presupposes the existence of a demonstrable connection between the product's defining attributes and the specific environmental and human factors associated with its place of origin.

This assumption of stability is further reinforced by more stringent sui generis regimes, particularly within the European Union and under the Lisbon Agreement. This agreement introduced the concept of Appellation of Origin (AO), which requires that the quality and characteristics of a product derive entirely from its geographical environment, including both natural and human factors.[9] Within the European legal framework, an AO is treated as a form of collective right that cannot be transferred. Its existence is intrinsically linked to the integrity of the designated terroir. The legal instrument that formally defines and regulates an AO is the cahier des charges.[10] This document

[9] María P. Puerta, "The Natural Factor in Appellations of Origin Granted to Handicrafts in Colombia [El Factor Natural en las Denominaciones de Origen Otorgadas para Artesanías en Colombia]," Revista de Derecho Privado 45 (2023): 279–305, https://doi.org/10.18601/01234366.45.10

[10] France, Code de la propriété intellectuelle, Titre II : Indications géographiques (Articles L721-1 à L722-17), Légifrance, accessed March 5, 2026, https://www.legifrance.gouv.fr/codes/section_lc/LEGITEXT000006069414/LEGISCTA000006146368/#LEGISCTA000006146368

contains detailed specifications outlining the standards and requirements that a product must satisfy in order to qualify for the AO designation. As such, it plays a crucial role in safeguarding the quality, authenticity, and reputation of products associated with a particular geographical area.

At the national level, Indonesia has internalized the same underlying assumption through its Trademark and Geographical Indications Law (Law No. 20 of 2016). Article 1(6) defines a Geographical Indication as a sign indicating the geographical origin of a good and/or product whose reputation, quality, or specific characteristics are essentially attributable to geographical environmental factors, including natural factors, human factors, or a combination of both. A key requirement for GI registration is the submission of a specific set of documentation. The preparation of this documentation is regulated under Article 1(11) of the same law concerning the Geographical Indications Description Document. This provision explains that the Description Document constitutes an official document containing detailed information regarding the reputation, quality, and characteristics of the goods and/or products, which are linked to the geographical factors associated with the GI application.

The requirement to obtain GI protection in Indonesia through the submission of a Geographical Indications Description Document inherently reflects a static record. In essence, the document functions as a "snapshot" of the product and its environmental conditions at the time of registration. Once approved, this document becomes a legally binding reference point for the governance and enforcement of the GI designation. The Description Document specifies the permissible varieties that may be used, the cultivation methods that are allowed, and the quality parameters that must be satisfied. These specifications are established on the basis of the ecological conditions prevailing at the time of registration.

From a legal perspective, this specification document functions as the "constitution" of the Geographical Indication itself—a regulatory instrument designed to ensure legal certainty and consistency rather than flexibility. Consequently, from the TRIPS framework to national regulatory regimes, the entire legal architecture of Geographical Indications operates according to a "time-snapshot" logic, whereby the

conditions of terroir are effectively frozen at the moment of registration while the possibility of future environmental transformations is largely disregarded. This structural rigidity becomes particularly problematic in the context of climate change, where the environmental conditions underpinning terroir are increasingly subject to dynamic and unpredictable transformations.

B. The Scientific Reality of a Shifting Terroir: A Case Study of Climate Impacts

The legal assumption of stability underlying the Geographical Indications (GI) framework now stands in sharp contrast to the scientific realities of climate change. Evidence from climatological and agronomic studies indicates that many of the world's most renowned terroirs are undergoing rapid and unavoidable transformations.

Case Study 1: Viticulture and the Threat to Wine Identity

Terroir in viticulture plays a fundamental role in determining the quality of grapes and wine. Climate constitutes one of the most critical components of terroir, as factors such as temperature, precipitation, and humidity directly influence vine growth and the ripening process of grapes.[11]

Climatic conditions in traditional wine-producing regions have historically been characterized by relatively warm temperate environments. However, climate change has led to a significant increase in average temperatures. Beyond rising temperatures, climate change has also intensified the frequency of heatwaves, which in turn contributes to more widespread drought conditions. These environmental shifts have significant effects on grapevine physiology, particularly on the composition of grape volatile compounds—substances responsible for the aroma and flavor profiles of grapes and wine. Higher temperatures can lead to reduced concentrations of aromatic compounds in certain white grape varieties at equivalent sugar levels. Consequently, temperature plays a critical role in regulating both the synthesis and degradation of volatile compounds in grapes. Elevated temperatures during the ripening period may accelerate the breakdown

[11] L. Deis, L. Martínez, B. S. da Costa, and M. Vilanova, "The Influence of Climatic Conditions Associated with Altitude on the Volatile Composition of Cabernet Sauvignon Wines from Argentina, Spain and Portugal," Horticulturae 10, no. 8 (2024), https://doi.org/10.3390/horticulturae10080870

of specific volatile compounds, thereby altering the aromatic profile of the resulting wine. Moreover, warmer conditions can disrupt the balance between primary and secondary metabolites in grapes, which further influences aroma development and overall wine quality.

The findings of Leonor Deis et al. indicate that vineyard location significantly modifies the volatile composition of Cabernet Sauvignon grapes, as all measured groups of volatile compounds were affected.[12] Volatile acids, C6 compounds, aldehydes, esters, and terpenes exhibited their highest concentrations at an altitude of 2400 meters above sea level, where the greatest thermal amplitude was observed. In contrast, in Portugal, where the studied vineyards are located at lower elevations (approximately 77 meters above sea level) under relatively warm climatic conditions, higher concentrations of alcohols and lactones were detected. Similarly, elevated alcohol concentrations were observed in grapes from vineyards situated at 413 and 155 meters above sea level in Spain. Principal component analysis further revealed a positive correlation between Cabernet Sauvignon grapes cultivated at higher elevations and the presence of terpenes, whereas grapes grown in lowland vineyards showed stronger correlations with alcohols and lactones. These findings illustrate how climatic and topographical variations can reshape the chemical profile of grapes, thereby demonstrating that terroir is not a fixed ecological condition but a dynamic system susceptible to environmental change.

Case Study 2: Arabica Coffee and Habitat Contraction

Climatic variables such as temperature, precipitation, and the duration of wet and dry seasons are key determinants of climatic suitability for Arabica coffee production zones.[13] In the Gayo Highlands of Aceh, Arabica coffee production is strongly constrained by elevation, with suitable cultivation areas typically located between 1,000 and 1,600 meters above sea level. Climate change, particularly rising temperatures,

[12] Deis et al., "Influence of Climatic Conditions"

[13] I. N. Muslihah, M. Karuniasa, and T. Herawati, "The Impact of Climate Change on Arabica Suitability Area and Opportunities to Reduce Vulnerability," IOP Conference Series: Earth and Environmental Science 575, no. 1 (2020): 012078, https://doi.org/10.1088/1755-1315/575/1/012078

has increased the vulnerability of Arabica coffee production systems.[14] Projections indicate that North Sumatra is expected to experience the most significant decline in suitable Arabica cultivation areas by 2050.[15] The greatest losses are projected to occur within zones currently classified as having moderate vulnerability. This pattern is consistent with the spatial distribution of climate vulnerability across regions that presently exhibit suitable conditions for Arabica cultivation.[16]

The productivity of Arabica coffee is strongly influenced by temperature and is highly sensitive to thermal variation. Even a temperature increase of 1 °C can significantly reduce coffee productivity. Climatic gradients associated with elevation play an important role in moderating these temperature effects. On average, temperature declines by approximately 0.6 °C for every 100 meters above sea level, resulting in a decrease of around 1.0–1.2 °C for every 200 meters of elevation gain. Consequently, cooler conditions are generally observed at higher altitudes, particularly within elevation ranges of >1000–1200 m, >1200–1400 m, and >1400–1600 meters above sea level. These lower temperature conditions are considered favorable for Arabica coffee cultivation and are widely believed to enhance coffee yields.[17]

Climate projection models for the Gayo Highlands indicate that a temperature increase of 1–2 °C will significantly reduce the area suitable for Arabica coffee cultivation. In practical terms, the mountain effectively becomes "shorter," as rising temperatures push the optimal cultivation zone to higher elevations. This dynamic may force farmers either to shift toward more heat-tolerant varieties such as Robusta or to relocate plantations to higher altitudes—an adaptation that is not indefinitely feasible due to geographical and ecological constraints. If

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[14] A. Hanan, A. Anhar, Y. Abubakar, and A. Karim, "Arabica Coffee Yields at Various Harvest Seasons and Altitudes in the Gayo Highlands, Aceh," IOP Conference Series: Earth and Environmental Science 1297, no. 1 (2024): 012001, https://doi.org/10.1088/1755-1315/1297/1/012001

[15] Muslihah, Karuniasa, and Herawati, "Impact of Climate Change on Arabica Suitability Area"

16 Muslihah, Karuniasa, and Herawati, "Impact of Climate Change on Arabica Suitability Area"

[17] Hanan et al., "Arabica Coffee Yields at Various Harvest Seasons,"

the distinctive characteristics of Gayo coffee, which are closely associated with the cool climatic conditions of the highlands, are lost, the causal link underpinning its Geographical Indication (GI) status may be fundamentally disrupted. This scenario illustrates how climate-induced ecological shifts may undermine the foundational requirement of Geographical Indications—the stable causal relationship between product characteristics and their geographical origin.

Case Study 3: Non-Agricultural Products and Ecological Change

Guérande sea salt, also known as Sel de Guérande, is a renowned artisanal sea salt harvested from the salt marshes of the Guérande Peninsula in France. To understand the historical origins of Guérande sea salt production, it is necessary to situate it within the broader context of salt production in Europe, particularly in France. The historical development of salt production in Europe can generally be divided into three major milestones: (1) prehistoric and ancient salt production, (2) medieval salt production, and (3) the technological and economic evolution of salt-making techniques. Archaeological evidence indicates that salt production in Europe dates back to prehistoric times, with documented exploitation of salt resources during the Early Neolithic period (late sixth millennium BCE).[18] During the Iron Age, regions such as the Seille Valley in eastern France became significant centers of salt production, with activities that had notable impacts on local hydrological systems and sedimentary environments. Salt production during the medieval period is evidenced by numerous production sites distributed across the Mediterranean region, including the Dalmatian coast, where such activities can be traced back to at least the twelfth century.[19] In France, the La Tène period—the later phase of the Iron Age—also recorded significant salt production activities, particularly in

[18] Eduardo Guerra Doce, F. J. Abarquero Moras, and G. Delibes de Castro, "Salt and Power in Copper Age Iberia," in Interdisciplinary Contributions to Archaeology (Springer Nature, 2025), 163–181, https://doi.org/10.1007/978-3-031-96692-7_9 , accessed February 28, 2026, https://www.scopus.com/pages/publications/105017994319?origin=resultslist

[19] B. Bechor, M. Conti, B. Keely, S. Avnaim-Katav, S. Mischke, S. Miko, et al., "Molecular to Macrofossils Indicating Last Millennium Sea Level in Lavsa Saltpans, Croatia," Quaternary International 710 (2024): 95–110, https://doi.org/10.1016/j.quaint.2024.10.002

the Hauts-de-France region.[20] The subsequent phase of technological and economic development witnessed important innovations in salt-making techniques. One of the most notable transitions was the shift from fire-based evaporation methods to solar evaporation, a technique introduced by the Romans that substantially improved production efficiency.[21] Taken together, the long historical trajectory of salt production demonstrates that the production of Guérande salt is rooted in a deep historical tradition, evolving through prehistoric practices, medieval economic systems, and later technological advancements.

The texture and taste of Guérande sea salt are directly influenced by the salinity levels within the salt marshes where it is produced. Several stages of the salt production process—such as stabilization, evaporation, and crystallization—can significantly affect the characteristics of the final product. For instance, concentration and crystallization ponds have been shown to exhibit the highest levels of microplastic contamination, which may potentially influence the texture of the harvested salt.[22] Changes in salinity levels resulting from sea-level rise and shifting precipitation patterns may also affect the quality of salt produced in these marsh systems. This phenomenon demonstrates that threats to terroir are inherently holistic in nature, extending beyond agricultural products to encompass the broader ecological systems that sustain traditional forms of production.

The case studies discussed above confirm that terroir is not a static entity. Climate change has transformed it into a dynamic variable, thereby creating a fundamental mismatch between physical reality and

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[20] A. Masse, D. Bardel, L. Blondiau, N. Buchez, and D. Cense, "The Role of Salt in the Economy of the Early La Tène Occupations of Northern France [La Place du Sel dans l'Économie des Occupations de la Tène Ancienne du Nord de la France]," Revue Archéologique de Picardie (2024), accessed February 28, 2026, https://www.scopus.com/pages/publications/105001870778?origin=resultslist

[21] Ana P. Montero, "Salt in the Old Continent: A Journey into Spain's Ancient Saltworks and Their Origins," in Interdisciplinary Contributions to Archaeology (Springer Nature, 2025), 257–293, https://doi.org/10.1007/978-3-031-96692-7_13, accessed February 28, 2026, https://www.scopus.com/pages/publications/105018001121?origin=resultslist

[22] P. Chanpiwat and S. Damrongsiri, "From Sea Water to Salt Crystals: An Onsite Investigation of Microplastics in a Conventional Sea Salt Farming System," Environmental Geochemistry and Health 46, no. 8 (2024), https://doi.org/10.1007/s10653-024-02079-z

the legal constructs designed to regulate it. This growing divergence between ecological transformation and legal rigidity exposes a structural vulnerability within the existing Geographical Indications framework, which continues to rely on assumptions of environmental stability.

C. The Legal Crossroads: Validity, Infringement, and Revocation of Geographical Indications under Changing Climate Conditions

The legal validity of Geographical Indications (GIs) within the national regulatory framework arises once a GI has been formally registered. Pursuant to Article 53 of UU MIG, a GI shall obtain legal protection after it has been registered by the Minister. Registration is granted only if several legal requirements are satisfied. These requirements are stipulated in Article 56 paragraph (1) letter (a) and Article 61 of the UU MIG. Article 56 paragraph (1) letter (a) of the UU MIG provides that an application for GI registration cannot be granted if it contradicts the state ideology, prevailing laws and regulations, morality, religion, decency, or public order. Furthermore, Article 61 of the UU MIG stipulates that a GI shall remain protected as long as the reputation, quality, and characteristics that constitute the basis for its protection are maintained.

Article 61 UU MIG requires that the reputation, quality, and characteristics forming the basis of GI protection must be maintained throughout the entire period of protection. This provision implicitly assumes that the natural conditions giving rise to the characteristics of a GI are static and can be preserved solely through human intervention. Such an assumption warrants critical examination for several reasons.

First, UU MIG does not require periodic review of environmental and climatic conditions in order to maintain GI protection. Consequently, a GI may continue to enjoy legal protection even when the natural conditions that originally formed the basis of its unique characteristics have significantly changed or even disappeared.[23] This situation creates a clear dissonance between formal juridical validity and substantive climatological validity.

[23] Kerr and Clark, "Are Geographical Indications Sustainable in the Face of Climate Change," 230

Second, the consequence of this dissonance is the emergence of illusory protection. Products that no longer reflect their original geographical characteristics may continue to be protected as GIs. As a result, consumers who rely on the GI label as a guarantee of quality and authenticity suffer informational harm. When products bearing a GI label fail to maintain these defining characteristics, consumers may be misled, which can ultimately lead to a loss of trust and a decline in the perceived value of the GI itself.[24] Such a condition runs counter to the spirit of consumer protection, which constitutes one of the central ratio legis underlying the GI regime.

Third, empirical conditions demonstrate that various Indonesian GI products—such as coffee, tea, and other agricultural commodities originating from mountainous regions—are increasingly facing significant pressure due to shifts in climate zones. These changes are not merely hypothetical; rather, they have been documented in numerous agroclimatological studies. Maintaining GI protection without climatological verification therefore results in a legal framework that operates in contradiction to empirical reality.

H. L. A. Hart developed the concept of the Rule of Recognition as the ultimate rule within a legal system that functions as the criterion of validity for all subordinate legal norms. The Rule of Recognition does not operate merely at a formal-textual level; rather, it requires acceptance by legal officials and relevant legal subjects.[25] Such acceptance operates both from the perspective of the internal point of view and the external point of view.[26]

The core of Hart's Rule of Recognition lies in the idea that a legal norm is not sufficiently valid merely by virtue of its formal enactment in accordance with established procedures. Rather, it must also be substantively recognized by the relevant legal community. Without such

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[24] A. Saran, S. S. Khadkekar, and P. Ghosh, "Empowering Consumer Rights and Community Welfare: Enhancing Corporate Accountability through a Geographical Indication Licensing Policy," International Journal on Consumer Law and Practice 12 (2024), https://doi.org/10.55496/MYVP7706

[25] Campos, "The Inescapability of Law and the Duty of the Rule of Recognition."

[26] Patel S. Hart's fundamental rule of recognition and normativity of constitutional change in India. Transnational Legal Theory. 2024;15(3):431–64. doi:10.1080/20414005.2024.2424691.

recognition, a norm becomes little more than a dead letter, lacking genuine social binding force.

When Hart's theory is applied in this context, Articles 56 paragraph (1) letter (a) and 61 UU MIG reveal a deficit of the Rule of Recognition in three dimensions.

First, a deficit of recognition from the GI producer community.

Farmers, artisans, and indigenous communities—who constitute the primary subjects of Geographical Indications—often lack awareness, understanding, and, in many cases, meaningful participation in the GI registration process. When the natural conditions underlying their products change due to climatological factors, they do not possess a clear legal mechanism to report, challenge, or modify existing GI protection. This situation reflects the absence of the internal point of view, namely the perspective in which members of a community accept legal norms as binding guides for behavior, within the very community that is most directly affected by the regulation.

Second, a deficit of recognition grounded in socio-ecological reality.

H. L. A. Hart emphasizes that the Rule of Recognition is rooted in social practice. When a legal norm can no longer be acknowledged as reflecting existing realities—in this case climatological and ecological realities—it risks losing its social legitimacy.[27] Article 61 of the UU MIG, which requires that the defining characteristics of a GI be preserved, becomes a norm that cannot be practically recognized by actors on the ground. The natural conditions that constitute the prerequisite for these characteristics are beyond their control and are insufficiently addressed within the legal framework itself.

Third, the failure of secondary rules.

In Hart's legal theory, the validity and functioning of a legal system depend not only on primary rules (rules governing conduct) but also on secondary rules, particularly the rules of change and rules of

[27] B. Deffains and C. Fluet, "Social Norms and Legal Design," Journal of Law, Economics, and Organization 36, no. 1 (March 1, 2020): 139–69, https://doi.org/10.1093/jleo/ewz016

adjudication.[28] The UU MIG does not provide adequate rules of change capable of responding to shifts in climatological conditions. There is no legal mechanism that allows for the amendment or reassessment of GI protection based on periodic ecological verification. The absence of secondary rules that are responsive to environmental change renders the GI protection regime rigid and non-adaptive. Consequently, the norms contained in Articles 56(1)(a) and 61 of the UU MIG fail to perform their regulatory function effectively.

Violations of Geographical Indications (GIs) may occur when the GI description document is not fulfilled. Article 1 point 11 defines the GI description document as a document containing information, including the reputation, quality, and characteristics of goods and/or products that are linked to the geographical factors underlying the GI application. From the perspective of producers, the GI description document effectively functions as a legal contract. Producers who fail to comply with the specifications set out in this document—for instance, when the product does not reach the required minimum acidity level due to excessive heat—may be considered legally in violation. This situation creates a form of unfair strict liability, as the law does not adequately consider the reasons why producers fail to meet the specifications they originally registered. Producers are therefore confronted with a regulatory paradox. In order to preserve the reputation of the GI, they must adapt to changing environmental conditions—for example, by employing new technologies or cultivation methods that were not included in the original description document at the time of registration. However, by adapting, they may simultaneously violate the requirement of "traditional production methods," which often forms part of the GI specification. The defense of force majeure also becomes increasingly fragile in this context. Climate change may no longer be considered an unforeseeable event; rather, it is increasingly treated as a predictable phenomenon. Consequently, producers cannot easily rely on force majeure to justify their inability to comply with the established GI specifications.

[28] Olivelle P. How to Change Law in Classical India: Hermeneutics in the Service of the Legal Profession. Religions of South Asia. 2023 Mar 24;17(1):6–22. doi:10.1558/rosa.25453

Within the logic of contract law, the failure to perform an obligation due to extraordinary circumstances that are unforeseeable and unavoidable (force majeure) typically serves as a justificatory ground releasing a party from legal liability. However, in the context of contemporary climate change, this avenue of defense is becoming increasingly narrow, if not virtually closed. Climate change can no longer be qualified as an unforeseeable event. For several decades, global scientific reports have consistently warned— with a high degree of certainty—about rising temperatures, shifts in climate zones, and increasing precipitation instability. Consequently, GI producers operating in the present era may be considered, from a legal standpoint, to have known or at least reasonably been expected to know that the climatological conditions underpinning the specifications of their GIs are subject to change. As a result, claims of force majeure based on the inability to comply with GI specifications due to climate change are likely to face significant legal obstacles, as they fail to satisfy the central requirement of unforeseeability. The law therefore not only imposes a form of strict liability, but also effectively closes off a traditional legal escape route that would otherwise be available to parties whose non-performance results from external circumstances.

When Hart's framework is applied to the construction of liability imposed on GI producers, three layers of Rule of Recognition deficits emerge, each undermining the legitimacy of the normative structure.

First, norms that cannot be recognized as realistic guides to behavior.

H. L. A. Hart argues that for a rule to be recognized by its subjects, it must function as a reasonable guide to conduct capable of being followed in practice.[29] When the specifications contained in a GI description document establish standards that can no longer be met under existing climatological conditions without technological adaptation, the rule loses its fundamental character as a practicable behavioral guide. Producers can no longer meaningfully orient their actions around such a rule, since compliance itself becomes contingent upon natural conditions beyond their control. From Hart's perspective

[29] J. Crowe and L. Agnew, "Legal Obligation and Social Norms," Adelaide Law Review, 2020, accessed March 10, 2026, https://www.scopus.com/pages/publications/85089593876

of the internal point of view, a rule of this kind can no longer be accepted as a practically binding standard of behavior; it survives merely as a textual norm devoid of the capacity to guide real-world conduct.

Second, the failure of rules of change in responding to external transformations.

Hart's legal system requires the existence of rules of change, namely mechanisms that enable legal norms to adapt[30] to evolving social and natural realities. The Law on Trademarks and Geographical Indications (UU MIG) does not provide a responsive mechanism for revising GI specifications in light of climate change. No procedure allows producers to request updates to GI description documents based on scientifically documented climatological shifts. The absence of such rules of change renders the GI protection regime normatively frozen in the midst of an ecologically transforming world. Hart himself identified this type of institutional rigidity as a sign of pathology within a legal system.

Third, the paradox as a manifestation of the failure of rules of adjudication.

Hart conceptualizes rules of adjudication as mechanisms determining how disputes are resolved and how legal norms are applied in concrete situations. The paradox faced by GI producers—where substantive compliance requires actions that procedurally constitute a violation—reveals the inability of adjudicative mechanisms to produce coherent and fair outcomes. A legal system that allows such a paradox to persist without an institutional mechanism for resolution fails to perform its adjudicative function in a legitimate and meaningful manner. A norm that simultaneously demands compliance while rendering every attempt at compliance a violation becomes a self-defeating norm, one that ultimately loses its own normative content.[31]

The revocation of Geographical Indications (GIs) under the Indonesian national regulatory framework is governed by Article 61

[30] Mathew S, Hadfield GK, Mwangi D, Reynolds S. Metanorms generate stable yet adaptable normative social order in a politically decentralized society. Philos Trans R Soc Lond B Biol Sci. 2025 Dec 4;380(1940):Article 380(1940). doi:10.1098/rstb.2024.0260 PubMed PMID: 41537884.

[31] Fullhart S. Embracing self-defeat in normative theory. Philos Phenomenol Res. 2024 Jul 1;109(1):204–25. doi:10.1111/phpr.13033.

paragraph (2) of the UU MIG. This provision stipulates that GI protection shall terminate when the reputation, quality, and characteristics that constitute the basis for granting GI protection are no longer maintained, or when the GI violates the provisions set forth in Article 56 paragraph (1) letter (a).

Structurally, this provision places revocation as an automatic legal consequence of the failure to satisfy the substantive conditions that originally justified the granting of GI protection. The normative logic underlying this provision appears simple and linear: protection is granted because the required conditions are fulfilled, and therefore protection must be withdrawn when those conditions are no longer met. However, behind this seemingly straightforward logic lies a fundamental normative weakness when the rule is confronted with the realities of climate change and the constantly evolving dynamics of geographical conditions.

Article 61 paragraph (2) of the UU MIG does not distinguish between the failure to meet GI specifications caused by producer negligence and failure resulting from external factors beyond the producers' control, such as climate change, ecological disasters, or systemic environmental degradation. The revocation norm applies uniformly to both situations: producers who act negligently are treated in the same manner as producers who become victims of changing natural conditions.

Such a construction gives rise to what can be termed "causally blind revocation".[32] This implies that the law considers only the outcome of non-compliance with the standard, without tracing the underlying reasons why the standard could not be met. As a result, producer communities that have preserved the traditions and reputations of their GI products for decades may lose legal protection solely due to climatic conditions beyond their control or capacity.

Moreover, the UU MIG does not provide a transparent and equitable verification mechanism prior to revocation. There is no provision requiring a thorough assessment of the underlying causes for

[32] Liepina R, Sartor G, Wyner A, Lagioia F. Argumentation Schemes for Legal Presumption of Causality. 19th International Conference on Artificial Intelligence and Law, ICAIL 2023 - Proceedings of the Conference. 2023 Sep 7;157–66. doi:10.1145/3594536.3595130

non-compliance with the standard, no procedure guaranteeing producers' right to defend themselves, and no mechanism distinguishing between permanent failure and temporary failure caused by climatic anomalies. Consequently, revocation carries the potential to function as a disproportionate instrument lacking procedural fairness.

D. The Future Governance of Geographical Indications in Indonesia

An integrated and holistic approach is required to align intellectual property law (IPR) with climate change policy. Existing legal frameworks often fail to balance robust protection of intellectual property rights with the urgent need for technology dissemination to address climate change.[33]

Legal certainty possesses an axial quality that shapes both the interpretation of legal rules and the application of statutes(26). Accordingly, this principle must be upheld by all branches of state power. Its purpose is to promote several fundamental values in the protection of human rights, including the rule of law, safeguarding legitimate expectations, maintaining public confidence in the legal system, preventing arbitrary decision-making, and ensuring the non-retroactivity of laws.[34]

From the perspective of Hart's theory, the restructuring of the GI protection regime is not merely an optional policy choice but a requirement of legal legitimacy itself. Recovery from this crisis necessitates a fundamental renewal of the secondary rules. Such a restructuring does not weaken the GI protection system; on the contrary, it restores the legitimacy of the Rule of Recognition, which underpins the validity of the entire system. A norm that is genuinely recognized by producer communities because it reflects realities they

[33] Tundang RE. Aligning climate needs and intellectual property: an entitlement-based framework for green technology transfer. Journal of International Economic Law. 2025 Sep 1;28(3):441–59. doi:10.1093/jiel/jgaf030

[34] J. Janderová and P. Hubálková, "Legal Certainty – Protected Values and Partial Objectives: The Case of the Czech Republic," Central European Public Administration Review 19, no. 1 (May 30, 2021): 63–82, https://doi.org/10.17573/cepar.2021.1.03

can engage with possesses true binding force, rather than merely coercive force based on the threat of sanctions.

The "snapshot" concept in GI regulation must be reconsidered in light of climate change. GI description documents should be reformulated as living documents. Adaptive management within intellectual property law is necessary to fulfill the very objectives of GI protection.

France provides a legal framework for GI protection that can respond to climate change. GI specifications in France are designed to evolve post-official recognition.[35] The fundamental condition for approving any modification is that it must not alter or weaken the product's connection to its place of origin.

Each request for modification, which must be submitted by the Organisme de Défense et de Gestion (ODG), is reviewed and analyzed by the Institut National de l'Origine et de la Qualité (INAO) through a procedure involving multiple stakeholders.[36] Once validated, the revised specifications are approved following the same formal procedure as the original recognition, both at the national and European levels.[37]

Modifications prompted by climate change can be categorized into two main types[38]:

- Occasional requests, following extraordinary climatic events that make it impossible to meet certain technical requirements of the specifications (temporary modifications).
- Structural requests, aimed at adjusting recurring elements from temporary modifications (e.g., allowing irrigation) or facilitating

[35] G. Flutet, C. Blot, J. Gautier, L. Mayoux, and A. Ognov, "The Issue of Geographical Indications in the Face of Climate Change in France," in Worldwide Perspectives on Geographical Indications: Crossed Views between Researchers, Policy Makers and Practitioners (January 1, 2025), 367–372, https://doi.org/10.1007/978-3-031-71641-6_27

[36] Flutet et al., "The Issue of Geographical Indications in the Face of Climate Change in France,"

[37] Flutet et al., "The Issue of Geographical Indications in the Face of Climate Change in France,"

[38] Flutet et al., "The Issue of Geographical Indications in the Face of Climate Change in France,"

adaptation to new constraints (such as introducing varieties better adapted to dry conditions and elevated temperatures).

France's approach is codified in the Code de la Propriété Intellectuelle (CPI). Article L. 721-3 CPI[39] stipulates that GI specification changes may be made through a defined procedural process. Modifications are submitted in the form of an application for approval or specification change to the Institut National de la Propriété Industrielle (INPI). Article L. 721-6 CPI provides that the Organismes de Défense et de Gestion (ODG) contribute to the public-interest mission of preserving and promoting the region, local traditions, expertise, and the products derived therefrom. For each GI-protected product, the ODG is responsible for its protection and management. Under Article 2, the ODG is authorized to submit any proposed modifications of the specifications to the INPI.

Article L. 411-4 CPI stipulates that the Director General of the Institut National de la Propriété Industrielle (INPI) shall make decisions provided for in the Code when issuing, rejecting, or maintaining industrial property rights, as well as when approving, rejecting, or amending the specifications of geographical indications established under Article L. 721-2 CPI, or when revoking such approvals.

These three provisions constitute an integrated normative system: the ODG acts as the proposing entity (L.721-6 CPI), the specification revision procedure provides the formal channel for modifications (L.721-3 CPI), and the Director General of INPI serves as an independent approving authority (L.411-4 CPI). This cohesive framework renders the system a suitable model for potential adoption in Indonesia.

The French CPI system addresses Indonesia's normative gaps across three critical points simultaneously: (1) the entity authorized to propose revisions—the ODG under L.721-6 CPI, whose Indonesian counterpart would be the Geographical Indication Protection Community (MPIG); (2) the formal mechanism for submitting

[39] "Titre II: Indications Géographiques (Articles L721-1 à L722-17)."

revisions—the approval request procedure under L.721-3 CPI; and (3) the independent and authoritative approval body—the Director General of INPI under L.411-4 CPI, corresponding to DJKI in Indonesia.

The French GI system and the Indonesian GI system share substantively identical legal objectives, despite being formulated within different contextual frameworks(28). This alignment of objectives renders the adoption of the French model not only feasible but also teleologically coherent. Table 1 presents a comparison of the legal objectives of the GI systems in both countries.

TABLE 1. Comparative Legal Objectives of Geographical Indications in France and Indonesia

France	Indonesia
Protecting geographical names that reflect the quality and reputation of products associated with a specific region of origin (Article L.711-1 CPI).	Protecting marks that indicate the origin of a product which, due to geographical factors including natural factors, human factors, or a combination of both, give the product a reputation, quality, and specific characteristics (MIG Law)
Public interest mission: preserving the region, local traditions, and expertise (L.721-6 CPI).	Purpose of protection: to encourage the production of regional specialty products and protect producers and consumers (Explanation of the MIG Law).
Adaptive mechanism: specifications can be revised when production conditions change, including due to natural factors (L.721-3 CPI).	Loophole: there is no explicit revision mechanism even though the protection objective recognizes natural factors as the basis for GI (Article 53 of the MIG Law only states that protection lasts as long as the characteristic exists).

Independent authority: INPI has the authority to approve, reject, or modify GI specifications (L.411-4 CPI).	Loophole: DJKI has authority over IG registration, but there is no article that explicitly gives DJKI the authority to change approved requirement documents.

Sources: Authors, 2026 (edited)

The comparison table above shows that, although the ultimate objectives of both systems are identical, the French system offers a set of instruments that the Indonesian system lacks. Adopting the French model in Indonesia does not imply a shift in policy direction but rather an addition of tools to achieve existing goals. From a teleological perspective, this constitutes the strongest argument: when the objectives are the same, adopting more effective instruments to achieve them represents a normatively consistent choice.

Indonesia ranks among the countries most vulnerable to climate change.[40] In the absence of a clear mechanism for revising specifications, such as Article L.721-3 of the French CPI, MPIG lacks a formal legal pathway to adapt production practices. Consequently, two interrelated policy risks arise: producers who adjust practices without formal revision may forfeit GI protection due to noncompliance with the description document, whereas those who rigidly adhere to ecologically outdated specifications risk diminished productivity and compromised product quality.

The mechanism under Article L.721-3 of the French CPI serves as a bridge between GI protection and climate adaptation, directly addressing the policy dilemma outlined above. With a formal revision pathway proposed by MPIG (the counterpart of ODG) and authorized by DJKI (the counterpart of INPI), Indonesia would possess a legal mechanism to update GI description documents in line with changing

[40] S. Samir, S. Baja, R. Utami, and Z. Z. Walyandra, "Climate Shocks and Agricultural Output Dynamics in Indonesia," Discover Sustainability 7, no. 1 (December 1, 2026), https://doi.org/10.1007/s43621-025-02438-5

ecological conditions, without revoking or nullifying existing GI protection.

Under the current Indonesian system, MPIG primarily functions as a representative of producers' interests but is not explicitly recognized as a partner in pursuing public-interest objectives. Adopting the principle of Article L.721-6 of the French CPI would fundamentally transform MPIG's legal status. By establishing that MPIG contributes to the public-interest mission of preserving territories, local traditions, and expertise, the law provides: (a) a justification for local governments to support MPIG's operations through regional budgets (APBD); (b) legitimacy for MPIG to participate in policy forums related to natural resource management and climate adaptation in its region; and (c) a legal basis for MPIG to establish formal partnerships with research institutions and universities to generate the scientific data necessary for revising GI specifications. In the context of climate change, this elevated status is critical: MPIG, recognized as a public-interest partner, holds a stronger legal position to propose data-driven specification revisions and can more readily access state technical and financial support to implement necessary adaptations.

Strengthening the substantive authority of DJKI in managing GI specifications is also necessary. Under the current Indonesian system, DJKI's authority over GIs is limited to registration and revocation, operating in a binary manner (approved or rejected). Adopting the principle of Article L.411-4 of the French CPI would expand DJKI's powers to include: (a) approving specification revisions submitted by MPIG; (b) rejecting revisions that fail to meet substantive requirements; (c) modifying or amending submitted revisions deemed not fully adequate but improvable; and (d) revoking GI approval if the geographical link is no longer satisfied.

Point (c)—the authority to modify submitted revisions—is the most transformative for the Indonesian system. It shifts the relationship between DJKI and MPIG from a passive "authority–applicant" dynamic to an interactive, constructive "evaluator–proposer" dialogue. In the context of climate adaptation, where specification revisions are often technical and complex, DJKI's ability to suggest modifications,

rather than outright rejection, can significantly accelerate the process of aligning GIs with changing ecological conditions.

In France, developing Geographical Indication (GI) specifications entails negotiations among all legitimate stakeholders, including producers, public authorities, and other relevant actors. Although the process can be lengthy and complex, it ensures that the established standards comprehensively reflect the interests and perspectives of all parties involved.[41]

Based on the discussion above, the following normative provisions are proposed for integration into the revision of the Indonesian GI Law or its implementing regulations. These proposals are inspired by the French model but adapted to the Indonesian legal context.

1) Proposed Article A — Counterpart to Article L.721-3 CPI (Specification Revision Mechanism)

   "(1) Amendments to an approved GI description document may be submitted by the Geographical Indication Protection Society (MPIG) to the Directorate General of Intellectual Property (DJKI) in the form of a revision request.(2) The revision request referred to in paragraph (1) must include: a. a description of the requested changes and the scientific, ecological, or factual rationale supporting them; b. evidence that the proposed changes continue to maintain the geographical link forming the basis of GI protection; and c. evidence of approval by a majority of MPIG members. (3) A revision request as referred to in paragraph (1) may be submitted on the basis of changes in natural conditions, including the impact of climate change on production conditions within the protected geographical area."

[41] B. Pick and D. Marie-Vivien, "Representativeness in Geographical Indications: A Comparison between the State-Driven and Producer-Driven Systems in Vietnam and France," Sustainability 13, no. 9 (May 1, 2021), https://doi.org/10.3390/su13095056

2) Proposed Article B — Counterpart to Article L.721-6 CPI (Public-Interest Mission of MPIG)

"(1) The Geographical Indication Protection Society (MPIG) carries out a public-interest mission in preserving territories, cultural heritage, local wisdom, traditional expertise, and products originating from the protected geographical area. (2) In carrying out the mission referred to in paragraph (1), MPIG shall have the authority to: a. submit revision requests for GI description documents as provided in this law; b. conduct periodic monitoring of production conditions, including changes in natural and climatic conditions affecting product characteristics; and c. establish partnerships with research institutions and scientific authorities for the preparation of data supporting the revision of GI description documents."

3) Proposed Article C — Counterpart to Article L.411-4 CPI (Authority of the Directorate General of Intellectual Property)

"(1) The Directorate General of Intellectual Property (DJKI) shall have the authority to approve, reject, or modify revision requests for GI description documents submitted under this law. (2) In the event the Directorate General approves a revision request, the approval decision shall be published in the Official Intellectual Property Gazette. (3) The Directorate General may revoke GI approval if the geographical link forming the basis of protection is no longer satisfied and cannot be restored through a revision of the GI description document. (4) Decisions of the Directorate General under this article may be subject to appeal before the Commercial Court."

The proposed adoption is not a mere legal transplant but a deliberate normative adaptation: it retains the institutional architecture of the French model (ODG/MPIG as the proposer, INPI/DJKI as the approver, formal procedures as the legal pathway), fills it with substantive content suited to the Indonesian context (recognition of climate change as a basis for revisions, DJKI's dialogical authority, MPIG's public-interest mission aligned with regional autonomy), and integrates it into the existing Indonesian GI legal framework without overhauling the entire system. Differences in legal systems in this comparative law exercise do not constitute an obstacle.

Indonesia follows a civil law system, with its legal heritage rooted in Dutch law, which belongs to the same civil law family as France. Moreover, GI provisions in the Indonesian GI Law (UU MIG) have already incorporated many principles from the European Union system (also civil law-based), including recognition of both "natural factors" and "human factors" as the basis for protection—a concept closely aligned with the French notion of terroir. The adoption of Articles L.721-3, L.721-6, and L.411-4 CPI, therefore, does not constitute a transplant across different legal families but rather represents a deepening within the same legal tradition.

Conclusion

The concept of terroir in Indonesia's GI protection under climate change warrants re-examination, as it currently exhibits a deficit in the rule of recognition, according to Hart's theory. Secondary rules, particularly rules of change, must enable adaptation to evolving climatic conditions. GI description documents under the Indonesian GI Law (UU MIG), presently static, should therefore be treated as living documents.

In responding to climate change, Indonesia's future GI governance could draw selectively from French GI regulations. Key provisions to consider include: mechanisms for revising GI description documents; a public-interest mission for MPIG, empowering it to propose revisions; and a dialogical authority for DJKI, facilitating collaborative evaluation and implementation of changes.

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