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Creating Sustainable Food Systems with Trademarks and Technology

Agnes Beatrice Gambill, JD, LLM

ABSTRACT

A geographical indication (GI) is a type of trademark that conveys the geographical origin and unique characteristics of a specialty product. Well-known examples of geographical indications include Champagne and Roquefort cheese. Numerous case studies from across the globe underscore the benefits that geographical indications can contribute to rural regions, such as increased job production, repopulation of rural areas, visibility, and renewed local pride. An international treaty called the Geneva Act grants intellectual property protection for geographical indications on a worldwide basis. Notably, the U.S. is not a party to this treaty and takes a hostile stance towards the use of geographical indications, especially when they are used to protect food names many Americans consider to be generic. This article disagrees with that policy position and argues that geographical indications should be leveraged in the U.S. to incentivize the creation of new and sustainable product markets and to revitalize economic development in rural areas, such as Appalachia. This article also discusses two novel ways to achieve this objective: (1) forming decentralized autonomous organizations (DAOs) to legally structure GI collectives; and (2) using blockchain tracing to maintain quality control of high-quality, GI-denominated products.
I. INTRODUCTION

Many common food and wine names that Americans are familiar with could be at risk of disappearance due to an international treaty called the Geneva Act of the Lisbon Agreement on Appellations of Origin and Geographical Indications (the “Geneva Act”), which entered into force in February 2020. Despite this fear, a stronger focus on the protection of geographical indications could lead to the creation of a new wave of sustainable food systems in America.

Geographical indications (“GIs”) are considered a subset of trademarks under U.S. law and are used to convey the geographical origin of produce, beverages, and foodstuffs, such as Feta cheese and Parma ham. The Geneva Act grants broad protection to geographical indications and appellations of origin on an international scale, which means that once a designation is registered with the World Intellectual Property Organization (“WIPO”), that designation is concurrently protected in every country that is a signatory to the treaty. The Geneva Act is controversial because it creates tension over the prevalent and unbridled use of common food and beverage names that may be generic names in some countries and protected designations in others. For example, U.S. producers of gruyere, gorgonzola, and similar products may be compelled by foreign GI-holders to rebrand these goods under different names to prevent infringement before they can be sold in international markets.

Although the Geneva Act could potentially harm the economic interests of U.S. businesses, the international treaty also presents an opportunity to rethink how the U.S. food and wine industry, including small producers from rural regions, can

4. Famous Appellations of Origin, WIPO (Dec. 2008), https://www.wipo.int/wipo_magazine/en/2008/06/article_0009.html (“An appellation of origin is a special kind of geographical indication generally consisting of a geographical name or a traditional designation used on products which have a specific quality or characteristics that are essentially due to the geographical environment in which they are produced.”).
5. Geneva Act of WIPO’s Lisbon Agreement Enters into Force, supra note 2; Geneva Act, supra note 2.5.
7. See New Consortium Seeks to Protect the International Right To Use Common Food Names for Cheese, Meat, Other Popular Foods, CISION PR NEWSWIRE (Mar. 26, 2012), https://www.prnewswire.com/news-releases/new-consortium-seeks-to-protect-the-international-right-to-use-common-food-names-for-cheese-meat-other-popular-foods-144207955.html (“No one country or entity should own common food names … if such efforts are successful, … [p]roducers around the world will be forced to consider relabeling potentially billions of dollars’ worth of food products.”).
8. CATO INSTITUTE, supra note 1 (“[S]trong GI protection benefits the traditional producers it privileges but, like all forms of rent-seeking, it does so at the expense of economic growth, competition, and consumer choice.”).
thrive in future years despite these crossborder regulatory pressures.9 To that aim, this article argues that the U.S. should embrace and invest in the use of geographical indications to support the development of rural, economically-remote regions, such as Appalachia.10

Part I explains the distinctions between geographical indications and appellations of origin while Part II examines the diverse legal frameworks that protect geographical indications, ranging from multinational treaties to U.S. trademark law. Part II also underscores the trade tensions brewing between Europe and the U.S. over the protection of geographical indications, trademarks, and generic terms. Part III first examines two rural-focused case studies that consider the potential costs and benefits of using GIs and, then, explores the use of GIs as a rural economic development policy mechanism. Part IV discusses why the Appalachian region may benefit from the use of local and regional geographical indications, and Part V offers solutions to increase the adoption of GIs in rural America. Two solutions include the formation of decentralized autonomous organizations (“DAOs”)11 to establish the collectives that own geographical indications, and the use of blockchain tracing to authenticate provenance, validate certification marks, and enhance quality control throughout the food supply chain.12

II. THE IMPORTANCE OF ORIGIN, TRADITION, AND THE ENVIRONMENT

A. Geographical Indications vs. Appellations of Origin

A geographical indication is an identifier or designation used on products that come from a specific geographical location.13 These unique products have qualities, characteristics, or a reputation that are intrinsic to the specific location, whether by virtue of environmental factors or the traditional knowledge that has been passed down from generation to generation within a community.14 Geographical indications are typically used to protect agricultural products, wine, foodstuffs, such as cheese and chocolate, and even handicrafts.15 While the term “geographical
Indication” is used as a broad type of classification in accordance with internationally-accepted definitions set by the TRIPS Agreement, the term also captures a mosaic of related concepts in other jurisdictions.  

For example, under European law, protected designation of origin (“PDO”) and protected geographical indication (“PGI”) are considered subcategories of geographical indications. Similarly, an appellation of origin is a special type of geographical indication that is defined by international treaties, such as the Lisbon Agreement, and has ties to the French appellation d’origine contrôlée system, which is the oldest label of origin system in Europe and the most strict of its kind.

The distinction between an appellation of origin and a geographical indication comes down to the strength of the nexus between the place of origin and the product, an interrelationship that is difficult to decipher at the application and implementation level. That special nexus can be established in a variety of ways, including by virtue of a product’s reputation or the unique characteristics or qualities that are imparted by the microclimatic terroir of the region. However, for appellations of origin, the nexus must be very strong, and the criteria for protection is prescriptive. To illustrate, the Geneva Act specifies that to qualify for protection, an appellation of origin must identify a product that (a) originates in a specific region or country; and (b) has qualities and characteristics that are essentially or exclusively due to the geographical environment, which resultantly give the product its celebrated reputation.

In Europe, an additional factor is required for appellations of origin: the product must be produced from start to finish in the defined geographical area.

Geographical indications, on the other hand, have a slightly lower bar to establish the product/origin nexus required to qualify for legal protection. For example, Article 2(1)(ii) of the Geneva Act states that a product’s qualities and characteristics


20. James E. Wilson, Terroir: The Role of Geology, Climate, and Culture in the Making of French 55 (Wine Appreciation Guild et al. eds., 1988) (Terroir is not easily defined, but could include “physical elements of a vineyard habitat - the vine, subsoil, siting, drainage, and microclimate ... and an additional dimension - the spiritual aspect that recognizes the joys, the heartbreaks, the pride, the sweat, and the frustrations of its history.”).


23. Geneva Act, supra note 2 at Art. 2(1)(ii).

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do not have to be “exclusively” due to the place of origin. In fact, applicants that have identified only one criterion that is attributable to the geographic origin, such as reputation or a localized production process, are eligible to apply for protection. Nevertheless, the product must still originate from a specific geographic location.

Compared to appellations of origin, a wider range of products are eligible for protection as geographical indications, which may have been an intentional strategy on behalf of international policymakers to encourage more diverse participation and increased registrations in the Lisbon System.

B. Notable Examples of Geographical Indications

Parma ham and Champagne are two well-known geographical indications that have a strong connection to the terroir of their surrounding environment and a reputation that is inextricably linked to their region of origin. These product designations are further analyzed in detail to demonstrate the emphatic nexus that is required by international law for registration and to protect their reputation.

Parma ham, or Prosciutto di Parma, has a production process that dates back to the Etruscan period. Ham that receives the Parma name must be produced in the province of Parma located in the Emilia-Romagna region of north-central Italy. This particular region is situated in close proximity to the Tuscan coast of Versilia near the Mediterranean Sea and is known for a rich variety of flora. When the Parma ham dries, it is infused with a uniquely sweet aroma that is a result of the salty sea air mixing with the fragrant scent of pine belts, olive groves, and chestnut groves that grow in the region.

Parma ham is made from pigs that belong to the Large White, Landrace, or Duroc breeds. These pigs cannot be bred with pigs from outside of the geographical area unless those breeds are compatible with the Italian Herd Book.

Once the ham is cured for a specified period of time, the mark of a five-point crown is sealed.
on the ham before it is packaged and sliced within the Province of Parma. Each step in the breeding, development, and production process is carefully monitored, and deviations from these standards can result in suspensions and heavy fines. For example, in 2019, the Istituto Parma Qualità, the independent body overseeing the examination and certification process for Parma ham, was sanctioned for awarding the Parma brand to hams produced from pigs that were crossbred with Danish boars. Although the fraud investigation into the genetic lines of the pigs did not result in any public health concerns, the case highlighted the gravity of complying with the strict rules that are specified by geographical indication law.

Figure 1: Five-point ducal crown logo on a Parma ham

Source: sebrenner (CC BY 2.0)

Wine labeled as Champagne is another prestigious geographical indication, which has been legally protected by France’s appellation system since 1927 and produced in the Champagne region since the 1600s. The earliest attempt to formally protect the Champagne designation occurred during the late 19th century when a phylloxera epidemic destroyed the vast majority of vineyards in the

36. Id. (noting the curing process must be for a minimum of 10 months for hams weighing between 7-9 kg and 12 months for hams weighing more than 9 kg).
37. The Parma Institute That Controls PDO Hams has been Suspended, LA REPUBBLICA (June 3, 2019), https://parma.repubblica.it/cronaca/2019/06/03/news/sospeso_l_istituto_parma_che_controlla_i_prosciutti_dop-227876421/.
39. See MARKS, supra note 39.
41. Erika Mailman, Meet Wine’s Worst Enemy, Phylloxera, WINE ENTHUSIAST, https://www.wine-mag.com/2019/05/02/wines-worst-enemy-phyloxera/ (last visited May 1, 2022) (Phylloxera is a tiny yellow insect pest that attacks vineyards by feeding on the roots and leaves of grapevines, resulting in deformation of the root system and secondary fungal infections of the roots that prevent water and nutrients from reaching the vine).
region. During that period, the Federation of Champagne Unions (Fédération de syndicats) organized to prevent dishonest producers from sourcing wine from outside of the region and to call upon the regulatory authorities to delimit the boundaries of eligible vineyard plots.

The historical province of the Champagne region is located in north-eastern France near the Belgium border and consists of four main growing areas, including Montagne de Reims and Côte des Blancs. The wine produced from the Champagne region has a distinct flavor compared to other sparkling wines in France due to the region’s terroir. In particular, the region has a dual climate with oceanic and continental influences that create steady rainfall and average temperatures of 50°F. The soil is made of limestone and chalk, which provides for good drainage and imparts a mineral flavor to the wine. The hillsides in the Champagne region are also uniquely sloped and provide an intensity of sunlight to the vineyards that is not available at lower altitudes. To obtain the Champagne appellation, the grapes must be handpicked, and the sparkling wine must be processed according to the Méthode Champenoise.

The regulatory body responsible for quality control and authenticity of the collective Champagne mark is the Comité Interprofessionnel du Vin de Champagne (CIVC), a cooperative organization that is represented by a commissioner appointed by the French Ministry of Agriculture to prevent fraudulent use of the mark and to ensure that the esteemed reputation of Champagne wine remains intact. Outside of the 84,000 acres in the Champagne region, sparkling wine is called Crémant.

One exception to the protected exclusivity of the Champagne designation was established pursuant to the US-European Community Agreement on Trade in Wine, which grandfathered in existing uses of semi-generic names of origin, such as Champagne, on non-European wine. This means that U.S. producers who were already using Champagne on their wine labels prior to the 2006 agreement can continue to do so. However, this protection is not available to new producers.

42. Musset, Recognition of the Champagne Appellation, supra note 41.
43. Id.
46. Musset, supra note 45.
51. Wine Country Staff, supra note 46.
53. Office of the United States Trade Representative, United States-EUROPEAN COMMUNITY AGREEMENT ON TRADE IN WINE (Sept. 15, 2005).
54. I.R.C. § 5388(c); Dept. of Treasury (TTAB), Industry Circular, Impact of the U.S. / EU Wine Agreement on Certificates of Label Approval for Wine Labels with a Semi-Generic Name or Retsina, Mar. 10, 2006.
III. PROTECTING GEOGRAPHICAL INDICATIONS

Geographical indications are protected through a mosaic of different legal mechanisms, including national and regional trademark law, common law, and consumer protection law. The TRIPS Agreement is a major reason why a variety of different approaches exist, given that it states that “members [are] free to determine the appropriate method of implementing the provisions of this Agreement within their own legal system and practice.” Many of these legal mechanisms work together in parallel or in combination and have been constructed from a historical, legal, sociological, and philosophical perspective. This section will provide a foundational understanding of relevant international treaties and geographical indication law in the United States and the European Union. This section will conclude with commentary on the trade implications of the Geneva Act, including the complicated treatment of generic names of origin within the international arena.

A. The TRIPS Agreement

Because of the expansion of global trade, international treaties were enacted to protect geographical indications from imitations produced abroad and, accordingly, to ensure cooperation and mutual reciprocity among the international community. The World Trade Organization (“WTO”) Agreement on Trade-Related Aspects of Intellectual Property Rights (the “TRIPS Agreement”) is the most comprehensive

55. RENEE JOHNSON, CONG. RSCH. SERV., IF10188, GEOGRAPHICAL INDICATIONS (GIs) IN U.S. FOOD AND AGRICULTURAL TRADE (2017); Dudding, supra note 9 at 173.
58. O’CONNOR AND COMPANY, GEOGRAPHICAL INDICATIONS AND TRIPS: 10 YEARS LATER … A ROADMAP FOR EU GI HOLDERS TO GET PROTECTION IN OTHER WTO MEMBERS (2005).
international treaty on intellectual property. The TRIPS Agreement sets the minimum standards of protection for intellectual property, including copyrights, trademarks, patents, and geographical indications. These standards must be recognized by WTO members and are enforceable by the WTO’s dispute settlement procedure. The TRIPS Agreement is signed by both the U.S. and Europe and so, both countries have established a minimum standard of legal protection for geographical indications in their respective jurisdictions, although these mechanisms are distinct in design.

Geographical indications are defined within the TRIPS Agreement as: “indications which identify a good as originating in the territory of a Member, or a region or locality in that territory, where a given quality, reputation or other characteristic of the good is essentially attributable to its geographical origin.”

The purpose of Article 22 of the TRIPS Agreement is to ensure that members have established a legal means for interested parties to prevent acts of unfair competition and deter the use of indications that mislead the public as to the geographical origin of a particular good. Although Article 22 provides a basic level of protection for geographical indications, it is insufficient as there is no explicit language that, in general, prohibits “imitations” of products. By contrast, wines and spirits are granted an enhanced level of protection in Article 23, which explicitly prohibits “imitations” of these types of beverages. In practice, Article 23(1) prevents wines and spirits that are not produced in the geographical indication’s place of origin from donning a protected designation, even when the true origin of the good is stated on the label (e.g., “Prosecco” and “Made in Croatia”). Furthermore, geographical indications for wines and spirits cannot be used on labels when translated into a foreign language (e.g., champanillo or little champagne), or when the

62. See Johnson, supra note 56 (The U.S. uses existing trademark law to protect GIs while Europe has adopted a sui generis system); WTO, Amendment of the TRIPS Agreement, https://www.wto.org/english/tratop_e/trips_e/amendment_e.htm (last visited May 1, 2022) (The United States and the European Union accepted the TRIPS Agreement in 2005 and 2007, respectively.).
63. TRIPS Agreement, supra note 60 at Section 3, Art. 22(1).
64. Id. at § 3(22)(2).
66. TRIPS Agreement, supra note 60 at Section 3, Art. 23.
67. TRIPS Agreement, supra note 60 at Section 3, Art. 23(1).
indication is accompanied by expressions, such as “type” or “style” (e.g., Scotch-type whiskey).\(^69\)

WTO members can provide further legal protections for geographical indications within their own local jurisdictions.\(^70\) However, generic marks, or the common names of goods and services, cannot be protected under the TRIPS Agreement.\(^71\) A mark is generic when it ceases to serve its function of identifying the source and the inherent quality of the product or service.\(^72\) Determining whether or not a term has become generic in another country has been the subject of debate among WTO members.\(^73\) Markholders from the European Union are especially keen to protect geographical indications with old historical lineages from genericide.\(^74\) Conversely, U.S. companies and small businesses, notably from the cheese industry, rely on common food names for trade and marketing and, therefore, are adverse to strong protection for geographical indications, especially for those high-value marks originating from Europe.\(^75\)

**B. The Geneva Act of the Lisbon Agreement on Appellations of Origin and Geographical Indications**

Other intellectual property treaties, such as the 1883 Paris Convention, the 1891 Madrid Agreement, and the 1958 Lisbon Agreement, laid the foundation for the TRIPS Agreement.\(^76\) The 1891 Madrid Agreement created the Madrid System, which is a cost-effective way for trademark holders to register and manage trademarks in multiple countries by making one filing with WIPO’s International Bureau.\(^77\) The 1958 Lisbon Agreement went a step further by creating a multilateral registry and a system of protection for appellations of origin.\(^78\) However, the Lisbon system favors Europe’s sui generis (i.e., non- trademark) model.\(^79\) As a result, no

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\(69\) TRIPS Agreement, supra note 60 at Section 3, Article 23(1) (noting that interested parties can prevent the use of GIs not originating from the place indicated by the GI even if accompanied by “kind,” “type,” “style,” “imitation,” or the like).

\(70\) TRIPS Agreement, supra note 60 at Art. 1(1).

\(71\) TRIPS Agreement, supra note 60 at Section 3, Article 24(6).


\(75\) CONSORTIUM FOR COMMON FOOD NAMES, NEW CONSORTIUM SEEKS TO PROTECT THE INTERNATIONAL RIGHT TO USE COMMON FOOD NAMES FOR CHEESE, MEAT, OTHER POPULAR FOODS, PR NEWSWIRE (Mar. 26, 2012).

\(76\) 1883 Paris Convention; 1891 Madrid Agreement; 1958 Lisbon Agreement.


\(78\) Lisbon Agreement for the Protection of Appellations of Origin and Their International Registration, October 31, 1958, as revised, July 14, 1967, 923 U.N.T.S. 205 [hereinafter Lisbon Agreement].

\(79\) Irene Calboli, Geographical Indications between Trade, Development, Culture, and Marketing: Framing a Fair(er) System of Protection in the Global Economy? in GEOGRAPHICAL INDICATIONS AT
common law jurisdictions are party to the Lisbon Agreement, including the U.S., due to the common law’s usage of certification marks, collective marks, and trademarks.\textsuperscript{80} The obvious gap between the Lisbon Agreement and the common law created a need for harmonization of the two legal systems.\textsuperscript{81}

The Geneva Act of the Lisbon Agreement on Appellations of Origin and Geographical Indications (the “Geneva Act”) was adopted in 2015 by Diplomatic Conference\textsuperscript{82} to modernize the Lisbon System and to bridge the gap with the common law trademark system.\textsuperscript{83} The scope of protection under the Geneva Act extends to geographical indications in addition to appellations of origin.\textsuperscript{84} One reason for the broadening of scope is due to the stringent requirements for protecting appellations, which meant that fewer products qualified under previous treaties.\textsuperscript{85} The Geneva Act also allows intergovernmental organizations to join the Lisbon System, including the European Union, which joined in 2019,\textsuperscript{86} and the African Intellectual Property Organization, which consists of twenty member states.\textsuperscript{87} Cambodia, one of the first countries to accede to the Geneva Act, has already registered a geographical indication for the Kampot pepper, which is aromatic, has a unique flavor of intense spice, floral, and citrus, and is favored by Michelin-starred chefs.\textsuperscript{88}

Figure 3: Cambodia’s Kampot Pepper

\textsuperscript{80} Gervais, supra note 66; WIPO, Contracting Parties to the Lisbon Agreement, https://wipolex.wipo.int/en/treaties/ShowResults?start_year=ANY&end_year=ANY&search_word=C&code=ALL&treaty_id=10 (last visited May 1, 2022).
\textsuperscript{81} Gervais, supra note 66.
\textsuperscript{82} WIPO, Negotiators to Attend Diplomatic Conference on Lisbon System, https://www.wipo.int/pressroom/en/articles/2015/article_0007.html (May 4, 2015) (A Diplomatic Conference is the “traditional method for concluding or revising treaties.” Diplomatic Conferences are held to “negotiate and adopt or revise multilateral treaties of particular significance to the international community.” When a treaty is ready for adoption, countries sign the treaty which signals a strong, but non-binding, indication of intent to join the treaty).
\textsuperscript{85} Daniel Gervais, Reinventing Lisbon: The Case for a Protocol to the Lisbon Agreement (Geographical Indications), 11 CHICAGO J. OF INTERNATIONAL LAW 79 (noting that the Lisbon Agreement has not been wildly successful, and membership is concentrated in the Mediterranean world).
\textsuperscript{88} Michael Sullivan, Cambodia’s Prized Kampot Pepper, Nearly Wiped Out By Khmer Rouge, Makes a Comeback, NPR (March 14, 2020).
Another distinctive yet controversial feature of the Geneva Act is that, once registered, a geographical indication can never become generic in any country that is a Contracting Party to the Act, even when there is no action on behalf of the markholder to maintain control over the designation.89 However, the Act does allow for the coexistence of geographical indications and trademarks and the Act does protect prior trademark rights.90 This means that a prior trademark cannot be prejudiced in a Contracting Party as long as the prior trademark was initially applied for in good faith.91 The Act also allows for the joint or separate registration of trans-border geographical indications, which originate from a geographical area that covers territory that touches two adjacent Contracting Parties.92

The adoption of the Geneva Act has been met with criticism.93 Notwithstanding the fact that Article 12 of the Geneva Act is extraordinarily difficult to reconcile

89. Geneva Act, Arts. 8(1), 12 (“Subject to the provisions of this Act, registered appellations of origin and registered geographical indications cannot be considered to have become generic in a Contracting Party.”); Gervais, supra note 66. (noting that a similar version of the lex originis regime is also present in the 1958 Lisbon Agreement); Graeme B. Dinwoodie, The Architecture of The International Intellectual Property System, 77 CHI-KENT L. REV. 993, at 996-99 (June 2002).
90. Geneva Act, Art. 12 (“Subject to the provisions of this Act, registered appellations of origin and registered geographical indications cannot be considered to have become generic in a Contracting Party.”).
91. Geneva Act, Art. 13(1) (“The provisions of this Act shall not prejudice a prior trademark applied for or registered in good faith, or acquired through use in good faith, in a Contracting Party. Where the law of a Contracting Party provides a limited exception to the rights conferred by a trademark to the effect that such a prior trademark in certain circumstances may not entitle its owner to prevent a registered appellation of origin or geographical indication from being granted protection or used in that Contracting Party, protection of the registered appellation of origin or geographical indication shall not limit the rights conferred by that trademark in any other way.”).
92. Geneva Act, Art. 5(4) (“In case of a geographical area of origin consisting of a trans-border geographical area, the adjacent Contracting Parties may, in accordance with their agreement, file an application jointly through a commonly designated Competent Authority.”).
with the doctrine of genericide in trademark law, the U.S. Ambassador to the US Mission in Geneva voiced a strong dissent to the overall outcome of the Diplomatic Convention. The Ambassador stressed that only 15% of WIPO’s membership participated in the negotiation process and that because of the lack of participation and broad consensus on behalf of all Conference members, the legitimacy of the adoption of the Geneva Act was cast into doubt.

The Ambassador also noted that key stakeholders, such as small producers and businesses in the U.S. who rely on trademark protection and the freedom to use generic marks, would be disadvantaged under the new Act since it would be near impossible to export their products.

The Geneva Act has also reinvigorated attempts from European consortiums to claw back the use of EU-protected names within the U.S., indeed, where the same names are considered to be generic. For example, four months after the enactment of the Geneva Act in 2015, two European consortiums applied for the certification mark GRUYERE, claiming that the first use of the term in the U.S. was as early as 1982. The European consortiums requested that the certification mark certify that the cheese originates from the Gruyère region of Switzerland and France. A group of U.S. food groups challenged the registration and alleged that GRUYERE is a generic name for cheese. In 2020, the Trademark Trial and Appeal Board (TTAB) held that GRUYERE was generic, which spurred the European consortiums to appeal to the U.S. District Court for the Eastern District of Virginia. In December 2021, the District Court affirmed the TTAB decision: GRUYERE is a generic term.

The court’s ruling was deemed a “landmark victory for American dairy farmers and cheese producers” that sets a “vital precedent in the much larger,
ongoing battle over food names in the United States.\textsuperscript{104} At the time of writing, the District Court’s decision is currently under appeal before the Fourth Circuit.\textsuperscript{105}

Given the precedent that the GRUYERE case sets, it is anticipated that other common food names may be deemed generic over time through litigation, an unanticipated effect of the Geneva Act coming into force. The District Court’s decision may also deter foreign food consortiums to controvert the genericness of EU-protected geographical indications within U.S. territory due to their limited budgets for enforcement and litigation.\textsuperscript{106}

\section*{C. Protecting Geographical Indications in the United States}

In the United States, geographical indications are considered a subset of trademarks.\textsuperscript{107} Accordingly, geographical indications are protected through the existing trademark system that is set forth in the Lanham Act and administered by the United States Patent and Trademark Office (USPTO).\textsuperscript{108} This protective trademark regime has been in existence since 1946 and provides protection for geographical indications as trademarks, collective marks, and certification marks.\textsuperscript{109} Geographical indications are also protected in the U.S. by state and federal law, including laws governing unfair competition.\textsuperscript{110}

The U.S.’s existing trademark system adequately meets the TRIPS Agreement standards for enforcement and national treatment of geographical indications.\textsuperscript{111} National treatment, which is required for WTO members, is the principle of providing the same or better treatment of the (intellectual property) rights of foreign nationals as that which is provided to national citizens.\textsuperscript{112} The U.S. trademark system also extends protection to geographical indications that are signs, designs, colors,
or 3-dimensional marks. Examples of geographical indications from the United States include FLORIDA for oranges, IDAHO for potatoes, and WISCONSIN for cheese. The most common way to protect a geographical indication within the U.S. is by registering a trademark, collective mark, or certification mark with the USPTO.

Figure 4: Wisconsin cheese marks

Source: Dairy Farmers of Wisconsin

1. Geographical Trademarks

In general, trademarks that incorporate a geographic name as part of the mark are not registrable because they describe a characteristic of a product, such as place of origin, rather than identify the source of the product, such as a specific company or producer. However, if the geographically-descriptive trademark acquires "secondary meaning," then the term is eligible for registration under trademark law. When a trademark obtains secondary meaning, consumers have come to recognize the term as the single source of origin for the product. For example, SIDAMO, the trademark for a specialty coffee product from Ethiopia, is the same name of a province in southern Ethiopia where the coffee beans are grown. Although the trademark is descriptive, the country of Ethiopia was able to secure ownership and
registration of the trademark by showing evidence that the geographic designation had acquired secondary meaning for a unique type of coffee that has been sold in the United States since 1928.\textsuperscript{120} Thus, geographical indications that have source-identifying capacity are protectable as a trademark in the United States.\textsuperscript{121}

\section{Collective Marks}

Collective marks are also available for registration in the United States and are popular alternatives to protecting geographical indications among European consortiums due to their similarity to the EU collective mark.\textsuperscript{122} There are two types of collective marks – collective trademarks and collective membership marks\textsuperscript{123} – and, the distinction between the two can be best summarized by the Trademark Trial and Appeal Board (TTAB):

A \textit{collective trademark} or \textit{collective service mark} is a mark adopted by a “collective” (i.e., an association, union, cooperative, fraternal organization, or other organized collective group) for use only by its members, who in turn use the mark \textit{to identify their goods or services and distinguish them from those of nonmembers}. The “collective” itself neither sells goods nor performs services under a collective trademark or collective service mark, but the collective may advertise or otherwise promote the goods or services sold or rendered by its members under the mark. A \textit{collective membership mark} is a mark adopted for the purpose of \textit{indicating membership in an organized collective group}, such as a union, an association, or other organization. Neither the collective nor its members use the collective membership mark to identify and distinguish goods or services; rather, the sole function of such a mark is to indicate that the person displaying the mark is a member of the organized collective group.\textsuperscript{124}

Collective trademarks are unique in that no single member or individual can own the mark.\textsuperscript{125} Accordingly, the collective, an organization such as an association, cooperative, or other organized group, holds title to the mark so that all of the members in the group can benefit collectively from it.\textsuperscript{126} In doing so, individual members of a collective cannot prevent other members, including rivals, from using the mark.\textsuperscript{127} As a result, members must produce a high-quality product on an

\begin{thebibliography}{99}
\item[120.] Geographical Indication Protection in the United States, supra note 108.
\item[121.] Geographical Indications, supra note 109.
\item[125.] Id.; Xiomara Quinones-Ruiz et al., Why Early Collective Action Pays Off: Evidence from Settling Protected Geographical Indications, 32 RENEWABLE AGRIC. & FOOD SYS. 179-82 (2017) (highlighting the many benefits for producers who engage in collective action with GI implementation, including the creation of truth and social cohesion, efficiencies in information gathering and transaction processes with various supply chain actors, and shared reputational identity).
\item[126.] Id.
\item[127.] Trademark Manual of Examining Procedure, supra note 126.
\end{thebibliography}
individual basis and work together collectively as a group to ensure that the standards and reputation of the group’s collective mark is strong. Without this cooperation, the status of the collective mark declines.

Similar to a regular trademark, geographic terms that are incorporated into either type of collective mark must have secondary meaning; otherwise, the owner must disclaim the geographic term. An example of a geographical indication protected as a collective trademark within the U.S. is shown in Figure 5 below. As displayed, the wording PECORINO ROMANO, which is a translation for “sheep’s cheese of Rome,” has been disclaimed by the registrant, an unincorporated association from Italy.

Figure 5:

Source: www.uspto.gov

Even though collective membership marks do not identify specific goods, these types of collective marks may be useful in setting membership standards for collectives that are affiliated with a particular geographical indication in order to signal to the public a variety of valuable information, such as a level of expertise in a particular subfield of agriculture, proof of residency in a certain region, or qualifications for continuing education requirements for the maintenance of sustainable agriculture techniques.

3. Certification Marks

Certification marks are also useful for protecting geographical indications as they indicate to the public that particular goods or their providers have met a specific set of standards. U.S. trademark law identifies three different certification categories: (1) geographical origin; (2) quality or characteristics of the goods; or (3) the labor and processes involved in the production of the goods. For example, the

128. See Geographical Indications, supra note 109.
130. PECORINO ROMANO, Registration No. 73377464.
certification mark ROQUEFORT uses two different categories of certification: (1) the origin of the cheese comes from the commune of Roquefort in the region of Occitania in southern France; and (2) the cheese is ripened in natural limestone caves according to a traditional process. One notable distinction between trademarks and certification marks is that a geographic term can be used in a certification mark without having any requisite secondary meaning, which is an exception to the well-known rule regarding unregistrability of descriptive marks.

Similar to collective marks, certification marks are not usually owned by individuals. In most cases, certification marks are owned by collectives, governmental bodies or a public-private organization with governmental authorization. This choice is intentional in order to ensure that all persons in a region are free to use the mark and to prevent a private actor from gaining sole control. Furthermore, a governmental body would have the authority to prevent unauthorized use of the certification mark.

Any entity or individual that meets the certifying standards is eligible to use the certification mark. But first, eligible entities must obtain permission from the collective, who controls the use of the mark by ensuring that specific certification standards have been met. If certification marks are not sufficiently monitored to conform to certification standards, then the mark can lose its status and become generic, as was the case for brie and camembert.

133. Cmty. of Roquefort v. William Faehndrich, Inc., 303 F.2d 494, 495 (2d Cir. 1962); Certification Statement, supra note 133.
134. Cmty. of Roquefort, 303 F.2d at 494 (“A geographical name does not require a secondary meaning in order to qualify for registration as a certification mark. It is true that section 1054 provides that certification marks are “subject to the provisions relating to the registration of trademarks, so far as they are applicable.” But section 1052(e)(2), which prohibits registration of names primarily geographically descriptive, specifically excepts “indications of regional origin” registrable under section 1054. Therefore, a geographical name may be registered as a certification mark even though it is primarily geographically descriptive.”).
135. In some rare instances, joint owners may apply for a certification mark and then assign the mark to a collective.
137. Id.
138. Id. (noting that governmental bodies or entities with governmental authorization have authority to exercise control over the use of a geographic certification mark and can prevent abuse or illegal use of the mark).
139. Id.
140. Id. (“[C]ontrol consists of taking steps to ensure that the mark is applied only to goods or services that contain the characteristics or meet the requirements that the certifier/owner has established or adopted for the certification.”); Certification Standards – Required for 1(a) Applications and Allegations of Use Only, TRADEMARK MANUAL OF EXAMINING PROCEDURE § 1306.03(b) (July 2021) (stating that “[t]he applicant (certifier) must submit a copy of the standards established to determine whether others may use the certification mark on their goods and/or in connection with their services ... [s]tandards [may be] established by another party, such as specifications promulgated by a government agency or standards developed through research of a private research organization”).
141. Geographical Indications, supra note 109 (stating that “Failure to monitor use of the geographic term can lead to the designation becoming the common name for a product that can be produced anywhere”).
4. State Law Protection

Outside of the U.S. trademark system, geographical indications can also be recognized by state law. For example, a Georgia statute, entitled the Vidalia Onion Act of 1986 (the “Vidalia Onion Act”), creates a geographical indication for VIDALIA onions. Vidalia onions are uniquely recognized for their sweet flavor, a characteristic that is attributable to the mild winters in Georgia, regular rainfall, and local soil that is low in sulfur. Although the VIDALIA mark makes no geographical reference to the state of Georgia, it is still considered a geographical indication, similar to Feta cheese. Both Feta cheese and Vidalia onions are distinctive products from a specific place of origin and have gained a reputation for originating from Greece and Georgia, respectively.

The Vidalia Onion Act sets forth the rules for growing Vidalia onions and authorizing the use of the Vidalia mark. For example, the Act creates a Vidalia Onion Advisory Panel and gives authority to a Commissioner to determine the varieties of Allium Cepa that can be grown within the region. The Commissioner is also given broad authority to prescribe rules, regulations, and quality standards for the onions, and to establish a verification and inspection program. The Vidalia Onion Act also restricts the use of the term VIDALIA exclusively to onions of the Vidalia variety that are grown within the Vidalia onion production area of Georgia.

5. Federal Law Protection

Federal law can also protect geographical indications. For example, in 1964, Congress designated Bourbon whiskey as a “distinctive product of the United States.” Congress also declared that “[Bourbon] must conform to the highest standards and must be manufactured in accordance with the laws and regulations of the United States which prescribe a standard of identity for ‘Bourbon whiskey.’” The standard of identity for Bourbon whiskey is defined in 27 C.F.R. §5.22(b)(1)(i):

“Bourbon whisky”, “rye whiskey”, “wheat whiskey”, “malt whisky”, or “rye malt whisky” is whisky produced at not exceeding 160° proof from a fermented mash of not less than 51 percent corn, rye, wheat, malted barley, or malted rye grain,

142. See Vidalia Onion Act of 1986 § 2-14-134, 2 GA. CODE ANN. § 2-14-134 (2017); See also § 3 § 13-0323, N.Y. ENVIRONMENTAL CONSERVATION LAW § 13-0323 (2016) (protecting blue point oysters); See also Act of May 4, 1964, 78 Stat. 1208 (noting that Bourbon is a distinctive product of the United States).
146. Geneva Act, Article 2.
152. Id.
respectively, and stored at not more than 125° proof in charred new oak containers; and also includes mixtures of such whiskies of the same type.”

The text of the Congressional resolution mentioned Scotch whiskey, Canadian whiskey, and cognac from the Cognac region in France to illustrate examples of other products with standards of identity that had been established under foreign law. These standards of identity are similar in design to U.S. certification standards and the standards defined under federal law for U.S.-based appellations of origin for wine.

The Bourbon geographical indication has proved providential for states like Kentucky and Tennessee. Billions of dollars have been generated from the bourbon industry, and thousands of jobs have been created. Bourbon branding is extremely valuable in part because the term BOURBON cannot be used to describe bourbon whiskey produced outside of the United States. These exclusive rights are protected internationally through several agreements, including the North American Free Trade Agreement, the United States-European Union Agreement on Nomenclature of Distilled Spirits, and the United States-Australia Free Trade Agreement.

6. Appellations of Origin and American Viticulture Areas

In the United States, wine can be protected by two different geographical indications: (1) appellations of origin and (2) American Viticulture Areas. Under federal law, an appellation of origin for wine is defined as identifying a geographic area where fruit or other agricultural products are grown, and each appellation signals that certain production requirements are followed. Labeling regulations in the United States require the use of an appellation of origin depending on what information is conveyed on the label to the consumer. For example, if the wine label includes a vintage date, a varietal designation, a semi-generic designation, or an “estate bottled” claim, then an appellation of origin must be printed on the label according to certain branding and formatting specifications. Examples of appellations of origin for wine might include any of the following: United States, 153 Alcohol and Tobacco Tax Trade Bureau, 27 C.F.R. § 5.22(b)(1)(i) (2022).


161. Id.

162. Id.

163. Id.
American, a State, a county, a multistate region, or an American Viticulture Area (AVA). An AVA is a special type of appellation of origin for wine that identifies a defined grape-growing region whose boundaries are determined by the Alcohol and Tobacco Tax and Trade Bureau (TTB). By contrast, the boundaries of an appellation of origin are usually drawn along state or country lines. AVAs can only be used as a geographical indication for grape wine, rather than from wines made from fruits, herbs, or other plants, like dandelions.

Before an appellation of origin or AVA designation can be used on wine bottles, wine producers must meet strict requirements pursuant to federal law. For example, to obtain an appellation of origin for wine, federal law requires that 75% or more of the grapes grown from the state or county of origin be used in the wine. The wine must also be fully finished within the state of origin. In comparison, to obtain an AVA designation, 85% or more of the grapes from the AVA region must be used in the wine, and the final product must be fully finished in one of the states within the AVA region. Some states, like California, have stricter criteria for granting the use of an appellation of origin or AVA designation on wine labels.

D. Protecting Geographical Indications in the European Union

Europe protects geographical indications using a sui generis system that is custom designed for GI designations. The sui generis system for geographical indications establishes a specific right that is separate and distinct from other intellectual property rights, including trademark rights. Pursuant to the European sui generis system, the EU has created three quality schemes that protect the name of

164. Id.
166. 27 C.F.R. § 4.25 (2022).
170. Id.
171. Id.
172. See CAL. CODE REGS. tit. 17, § 17015 (2021); See generally How to Read a Wine Label, NAPA VALLEY WINE (July 1, 2019), https://napavalley.wine/articles/how-to-read-a-wine-label--17#:~:text=California%20law%20requires%20that%20100,than%20the%20federal%20labeling%20standard.
174. Id.
products and promote distinct characteristics that are tied to the geographic origin and traditional knowledge from the region:175

- Protected Designation of Origin (PDO)
- Protected Geographical Indication (PGI); and
- Traditional Speciality Guaranteed (TSG).176

European PDOs are comparable to appellations of origin, as defined by the Geneva Act, given that this designation requires the strongest link to the place where they are produced.177 In particular, the products must have qualities or characteristics that are exclusively due to a particular geographic environment, and every part of the production, processing, and preparation process must take place in the specific region.178

European PGIs are comparable to geographical indications, as defined by the Geneva Act, in that a PGI emphasizes the relationship between the specific geographic region and the product name, which is created by virtue of a quality, reputation, or characteristic that is attributable to the region.179 Specifications for PGIs require that at least one of the production processes be made in the region of origin.180

Within the European Union, there are also national sui generis systems that legally protect geographical indications, such as French appellation laws, which further complicate matters for producers who sell their products globally and must apply these laws within a complex national and multinational framework.181 In 2005, an academic study noted that French consumers had difficulty in understanding French wine branding and often confused the terms that designated the geographical

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177. Geneva Act, Art. 2; Aims of EU Quality Schemes, supra note 176.
178. Aims of EU Quality Schemes, supra note 176 (noting that “[e]very part of the production, processing and preparation process must take place in the specific region.”).
179. Id.
180. Id.
181. See generally The National Institute of Origin and Quality, REPUBLIC OF FRANCE, https://www.inao.gouv.fr/eng/The-National-Institute-of-Origin-and-Quality-Institut-national-de-l-origine-et-de-la-qualite-INAO (last visited Apr. 15, 2022); Julian Alston & Davide Gaeta, Reflections on the Political Economy of European Wine Appellations, 7 ITALIAN ECON. J. 219-258 (2021) (The Appellation d’Origine Contrôlée (AOC) system was founded in France in 1935 to establish standards for wine production. Regulations were imposed on wine products and the laborious processes used to produce the wines. The AOC system established the collective reputations of different wine-producing regions in France by distinguishing wines in accordance with their unique combinations of terroir, grape varieties, and production methods).
origin of the wine. A 2011 study by the European Committee of Auditors revealed similar results. The 2005 study also highlighted that French winemakers expressed frustration with the strict rules of appellation laws, which held them back in international competitions. French producers called the rules and the organizational restraints of the French syndicates “regulatory straightjackets” because the criteria prevented them from using new technologies and freely adapting to new consumer tastes.

Europe’s goal of protecting geographical indications also serves a second purpose: supporting rural economies. In the preamble of Regulation 510/2006, the Council of the European Union (EC) notes:

[T]he promotion of products having certain characteristics can be of considerable benefit to the rural economy, particularly in less-favoured or remote areas, by improving the incomes of farmers and by retaining the rural population in these areas.

To date, Europe’s sale of GI-protected products have generated approximately €75 billion euros, much of which may have returned to rural areas. This economic windfall illustrates that consumers are willing to pay a premium for authentic regional products and support local producers.

III. GEOGRAPHICAL INDICATIONS MAY IMPROVE RURAL ECONOMIC CONDITIONS

Contemporary social science research highlights numerous success stories where geographical indications have been used as a policy mechanism to improve rural economic conditions. This section discusses two case studies from Kenya.

184. Id.
185. Id. at 11 (French syndicates own and control use of the appellation of origin).
186. Council Regulation 510/2006, 2006 O.J. (L 93) 12 (EC) (In the EU, Regulation 2081/92, Regulation 510/2006, and Regulation 1151/2006 articulate the objective that geographical indications should contribute to rural development in Europe, including creating employment opportunities, promoting diversification of products, and retaining rural populations in remote regions).
189. Id.
190. See THE IMPORTANCE OF PLACE: GEOGRAPHICAL INDICATIONS AS A TOOL FOR LOCAL AND REGIONAL DEVELOPMENT (William van Caenegem & Jen Cleary eds., 1st ed. 2017); See generally Ricardo Crescenz, et al., GEOGRAPHICAL INDICATIONS AND LOCAL DEVELOPMENT: THE STRENGTH OF TERRITORIAL EMBEDDEDNESS, REGIONAL STUDIES 381-393 (2021); See generally GEOGRAPHICAL INDICATIONS AT
and South Korea that address the costs and benefits of using geographical indications. Both case studies demonstrate how geographical indications can be particularly effective at producing economic rents and other socio-economic benefits in areas that are rural and underdeveloped or in areas that have scarce resources or complex environmental ecosystems.\textsuperscript{191}

Some notable socioeconomic benefits might include: (1) sustainable development and the preservation of biodiversity in the region; (2) the prevention of depopulation from rural areas; (3) the generation of new economic activity; (4) the prevention of the migration of production to lower cost areas; and (5) increased visibility of the region, including tourism.

Part IV highlights how the Appalachian region might benefit from the implementation of this rural economic development policy mechanism.

**A. Kenya: Supporting Agriculture in Complex Ecosystems with Geographical Indications**

Research shows that geographical indications are particularly apt for developing sustainable product markets in certain types of ecological environments.\textsuperscript{192} In 2019, a case study in Kenya examined whether or not agriculture producers from complex ecosystems derived value from the protection provided by geographical indications.\textsuperscript{193} The case study concluded that exploiting the terroir-based characteristics of high value products through the use of geographical indications led to further economic, social, and ecological benefits, including sustainable environmental management of the region.\textsuperscript{194}

In the case study, two products were considered: sweet apple mangos and Baringo goats that have a uniquely high salt content due to the natural salt deposits that the goats ingest while grazing in the region.\textsuperscript{195} Producers from the semi-arid region highlighted that the use of geographical indications reduced market failures.\textsuperscript{196} For example, producers of the sweet apple mangoes valued the ability to receive minimum guaranteed payments for their GI-protected products and to obtain transparent price information before the start of the season.\textsuperscript{197} Producers of the Baringo goats valued the access they gained to new distribution and sales

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\textsuperscript{192} Maina, supra note 192.

\textsuperscript{193} See id.; *Semi-Arid and Arid Region Landforms*, NATIONAL PARK SERVICE, https://www.nps.gov/subjects/geology/arid-landforms.htm (noting that semi-arid land receives very little rainfall, and the landscape is distinctive with rocks and little vegetation).

\textsuperscript{194} Maina, supra note 192 (participation in the Kenya case study was voluntary and required effective coordination and governance for its success).

\textsuperscript{195} Id.

\textsuperscript{196} Id.

\textsuperscript{197} Id.
channels. Producers also enjoyed the benefit of having shared resources for marketing.

Other benefits included the fact that producers had increased power in setting prices for their products. This behavior was an important transformation of norms because small-scale producers were previously known to be price-takers and typically sold their products only when they had a financial need. The use of geographical indications also reduced the cost of reputation building in the region, a benefit that complemented related policy incentives on food security and regional economic development.

The case study also noted potential risks to successfully implementing geographical indications to support agricultural and economic development, including: (1) problems with managing collective ownership of the designation and the collective reputation of a product; (2) issues with non-certified producers free-riding on the region’s enhanced reputation; and (3) ensuring that membership of producer groups do not grow infinitely in size. The first and second risk has anti-competitive implications while the latter risk has the potential to put a strain on environmental resources and lead to decreased prices (and quality) for the product.

Overall, the case study of sweet apple mangoes and Baringo goats from semi-arid regions in Kenya not only illustrates appreciable benefits to producer well-being, environmental sustainability, and economic development, it also suggests that concerns about competition and consumer welfare that are often cited by critical perspectives of geographical indications are somewhat exaggerated.

B. South Korea: Promoting Rural Economic Development with Geographical Indications and Quality Control

A case study on Boseong green tea production illustrates how the use of geographical indications revitalized the regional economy in Boseong County, South Korea. The impetus for implementing the geographical indication system in South Korea was born out of a pressure to cope with trade liberalization measures. Local government officials in Boseong County noted that if the quality

200. San, supra note 200 (noting that GI products often command premium prices).
201. See generally Maina, supra note 192.
202. Id.
203. Id.
204. See generally id.
205. See generally id; K. William Watson, Reign of Terroir: How to Resist Europe’s Efforts to Control Common Food Names and Geographical Indications, CATO INSTITUTE (Feb. 16, 2016), https://www.cato.org/policy-analysis/reign-terroir-how-resist-europes-efforts-control-common-food-names-geographical#the-u-s-approach-nbsp (noting that critics of the European model for protecting geographical indications point to the communal sharing of rights, a factor intrinsic to the geographical indication model, as reducing innovation and competition in their own market).
206. Suh & MacPherson, supra note 192.
207. Id.
of the region’s green tea could be protected by the new system, then local producers would be able to better compete with cheap, imported teas from other countries, such as China.\textsuperscript{208} The case study is informative as it documents the extent of the economic impact through qualitative interviews with local government officials and 18 producers from the region.\textsuperscript{209}

One notable outcome from the case study was the significant increase in the quality and reputation of the region’s green tea, which was a result of investment in the management of quality controls.\textsuperscript{210} The case study noted that experts, local officials, and research institutes had regular “quality evaluation meetings” to assess the standard of green teas sold in the markets, which applied “peer pressure” to improve inferior products and keep the quality standardized.\textsuperscript{211}

Producers from Boseong County also commented that they were “very proud” that green tea from the Boseong region was the first product registered as a geographical indication in South Korea, as that meant that the quality of the product had been officially acknowledged.\textsuperscript{212} Following the improvement in the quality of Boseong green tea and the burgeoning reputation of the geographical region, tourism to Boseong County multiplied dramatically. The study noted that the terraces of green tea harvests have since appeared in movies, commercials, and television dramas.\textsuperscript{213}

The local government in Boseong County also outlined the practical steps for creating a geographical indication system for the benefit of a rural region.\textsuperscript{214} To begin, stakeholders drafted an innovation plan and developed a systematic network of related agencies, universities, research institutes, intellectual property nonprofits, and associations of green tea producers.\textsuperscript{215} A project team was tasked to oversee administration, finances, and innovation planning, while local universities and research institutions worked together to develop new cultivation methods for organic farming.\textsuperscript{216} The media was also strategically engaged to advertise the medical benefits of Boseong green tea.\textsuperscript{217} The effects of this media campaign led to an expansion in production, processing, and tourism in Boseong County and surrounding areas.\textsuperscript{218}

IV. GEOGRAPHICAL INDICATIONS IN APPALACHIA

The Appalachian region presents a fitting case study in the U.S. for implementing geographical indications as a rural economic development policy mechanism.\textsuperscript{219}

\textsuperscript{208} Id.
\textsuperscript{209} Id.
\textsuperscript{210} Id.
\textsuperscript{211} Id.
\textsuperscript{212} Id.
\textsuperscript{213} Id.
\textsuperscript{214} Id.
\textsuperscript{215} Id.
\textsuperscript{216} Id.
\textsuperscript{217} Id.
\textsuperscript{218} Id.
\textsuperscript{219} Pick, supra note 199 (noting that GIs have recently attracted attention as a promising tool for socio-economic development to eliminate hunger and reduce poverty and for the preservation of the cultural values and traditional knowledge of the nation); See San, supra note 200 ("As GI products often command premium prices, they play an important role in the development of rural areas, which are
Spanning thirteen states along the eastern United States, Appalachia is rural, remote, and underdeveloped compared to other regions in the United States. Despite facing challenges such as economic transition in coal communities, the substance abuse crisis, and COVID-19, the Appalachian region is called “a region of great opportunity.”

Based on research findings from multiple case studies across the globe, investing in the adoption of geographical indications within the Appalachian region may support rural economic development by creating positive externalities specifically for the agriculture, tourism, and accommodation industries. Given the proliferation of the craft brewery movement and the celebration of numerous food festivals in the region, there are existing frameworks and social networks that can be leveraged to incubate new geographical indications that recognize the best products of the region. The adoption of geographical indications may also lead to other important social benefits, including improvement of the regional reputation of Appalachia.

A. Challenges to Overcome

Implementing geographical indications in an economically-depressed and rural region like Appalachia are likely to be challenging. Certain themes have emerged from the literature regarding the potential challenges that groups face when “taking a largely unknown region and turning it into a consumer brand.” One such...
challenge is sunk reputational costs. In other words, it is difficult and expensive to take a region that has a poor reputation and transform it into a region of prominence. Yet, such a transformation is not impossible. The notable wine regions in Australia were once known for producing cheap, fortified wines and bulk wine, yet are now known as some of the most well-respected wine-growing regions in the world. Some reasons for the transformation included keeping the industry small and working together with other winemakers to ensure that high-quality wines were produced. Other reasons included limiting only a small number of geographical indications to operate within a region and investing in marketing campaigns. Similar to the early days of the Barossa Valley and Hunter Valley, the Appalachian region will have to overcome the reputational costs of being known for poverty.

Another challenge to the successful adoption of geographical indications in Appalachia includes being careful about forming sub-regional geographical indications and resisting the temptation to quickly delineate boundaries. The reason for this caution is because it takes several years of experimentation and education to identify the best environmental sites and terroir conditions for producing high-quality products. Similarly, collective groups that manage and control the geographical indication are advised to craft sustainable codes of practice that promote environmental sustainability and preserve the local biodiversity in order to prevent over-exploitation of the region.

Reaching consensus is another obstacle that must be addressed. The stakeholders involved in owning and managing a geographical indication are diverse and often have varying degrees of power and resources. For example, large industrial companies might want to impose industrial certification standards that involve expensive machinery that a small artisan farmer within the same region might not be able to afford. In order for a geographical indication to thrive, these stakeholders must reach consensus over key issues, such as determining the overarching regional identity and who will use and control the designation. Establishing trust among stakeholders is also necessary for the group to formulate common strategic goals to ensure that the reputation of the designation and region remains strong. One strategy to fortify consistent collective efforts is to enforce rules governing participation.
production, marketing, and management of these ecosystems.\(^{241}\) The benefit of strong collective governance is that all stakeholders would have equal and unencumbered access to information and would share a common goal of maintaining the reputation of the products.\(^{242}\) An obstacle which seems to be neglected by the existing literature is the unknown extent of conscious awareness among the American public as to the functions and utility of geographical indications in trade, community building, and economic development.\(^{243}\) Awareness of geographical indications within the community is necessary to inspire producers to organize at the local level rather than being led by outsiders, such as governments or development agencies.\(^{244}\)

**B. Current Geographical Indications in Appalachia**

There are a few notable geographical indications with ties to the Appalachian region; however, a search of the USPTO’s trademark database revealed only a single (dead) certification mark with an Appalachian regional designation.\(^{245}\) Wine and spirits have fared particularly well in the region, which may be unsurprising given the Scottish and Scotch-Irish heritage that is a vibrant facet of Appalachian culture.\(^{246}\) For example, although Bourbon whiskey is a distinctive product of the United States broadly, the majority of its production can be traced to Kentucky and Tennessee in the Appalachian region.\(^{247}\) Tennessee whiskey, which is protected by Tennessee state law, is another geographical indication that has created economic windfalls for the state and the surrounding region.\(^{248}\) When the United States secured two fair trade agreements with South Korea and Japan to ensure that Tennessee whiskey was only produced in America, the success of Tennessee’s GI was further strengthened.\(^{249}\) In terms of GI-protected wine-growing regions in the Appalachian region, North Carolina has six American Viticulture Areas (AVA), including the Appalachian High Country, Swan Creek, and Yadkin Valley.\(^{250}\) These

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241. Maina, supra note 192, at 22.
242. Id.
243. See Tan, supra note 200 (an example GI as a way of community building and economic development in Malaysia).
244. See Pick, supra note 199.
247. Amanda Macias, Bourbon distillers face big tax bills and higher tariffs after a record year for production, CNBC (Oct. 6, 2021, 2:47 PM), https://www.cnbc.com/2021/10/06/bourbon-distillers-face-tax-bills-higher-tariffs-after-record-year-for-production.html (the Bourbon industry in Kentucky produces over 95% of bourbon in the entire world and generates approximately $9 billion for the state’s economy).
AVAs collectively support over 10,000 jobs and create $2 billion for the state economy annually.\textsuperscript{251}

\textbf{C. Potential Geographical Indications in Appalachia}

Besides wine and spirits, GI-protected food and handicrafts from the Appalachian region are more difficult to identify. The reason for this could be that collective marks and certification marks from the Appalachian region are not widely advertised. In comparison, the Dairy Farmers of Wisconsin are active in controlling and marketing their Wisconsin cheese designation.\textsuperscript{252} Furthermore, searching the USPTO database for certification marks and collective marks with a regional certification standard or with collective ownership can be complicated.\textsuperscript{253} One suggestion for policymakers is to consider creating a registry for geographical indications that is separate and apart from the trademark registration system in order to gather more data and create an easy search and application process.\textsuperscript{254}

One potential geographical indication from the Appalachian region could be Sourwood Honey. This style of honey is often sought after by honey connoisseurs because of its aromatic, floral notes with hints of spice and anise seed.\textsuperscript{255} Sourwood honey is also rare because the honey can only be produced where sourwood trees grow.\textsuperscript{256} The sourwood tree is one of the few endemic trees that is not found on other continents unless planted, and few exist even in North America.\textsuperscript{257} As Figure 6 illustrates, the Appalachian region has strong populations of sourwood trees.\textsuperscript{258}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure6.png}
\caption{The Native Range of Sourwood Trees}
\end{figure}

\textsuperscript{252} See DAIRY FARMERS OF WISCONSIN, https://www.wisconsincheese.com/.
\textsuperscript{257} Sourwood, ARBOR DAY FOUNDATION, https://www.arborday.org/trees/treeguide/TreeDetail.cfm?ItemID=921.
Appalachian ginseng also has strong potential for being registered as a geographical indication. Appalachian ginseng is distinct from Asian ginseng in that it provides certain cooling effects in addition to immune-system stabilizers. Appalachian ginseng has been hunted, sometimes illegally, for years and was commonly used in Native American medicine. Attempts to cultivate ginseng have been unsuccessful as much of the ginseng forest habitat has been lost to private development and farming. Furthermore, poaching may negatively affect the biodiversity of the forest and deplete a part of the region’s shared cultural heritage.

Figure 7: American (Appalachian) Ginseng

Recognizing sourwood honey, Appalachian ginseng, and other products or handicrafts as geographical indications from Appalachia would create an

260. Ebersole, supra note 260.
261. Id.
262. Id.
opportunity to support environmental sustainability, conserve biodiversity, and catalyze economic development in an area that is classified as one of the poorest regions in the United States. Geographical indication initiatives may also preserve the local heritage and instill community pride in the Appalachian region, which has been harmed by negative stereotypes over the years. This positive outcome is possible because forming an attachment to and identifying with a particular place not only produces social capital and trust among different groups, but it also weaves together the “social fabric” of a community. The connection between place, identity, and social capital is a powerful one, and geographical indications could be leveraged to strengthen this connection even further.

V. INCREASING THE ADOPTION OF GEOGRAPHICAL INDICATIONS IN APPALACHIA WITH BLOCKCHAIN TECHNOLOGY

Although implementing geographical indications could generate positive economic development outcomes for rural regions, the process of implementation can be onerous. This section identifies two challenges that impede the adoption of geographical indications: (1) the complexity in forming and governing the collectives that own geographical designations; and (2) the difficulty in maintaining quality control over products and the reputation of the region. Emerging technology, namely blockchain, offers novel solutions to address these challenges, such as blockchain tracing technology and the DAO organization model.

A. Managing Collective Governance with DAOs

Globally, geographical indications, including collective marks and certification marks, are typically owned by a collective, which is defined as “a number of people working together as a group.” Because collectives are managed by members, there is no hierarchy within the group and all members have equal decision-making power.

Within the United States, there are a few entity structures that can be used to form a collective-like model: (1) the unincorporated nonprofit association; (2) a member-managed LLC; and (3) a nonprofit organization. However, there are trade-offs with choosing any of these options. For example, an unincorporated nonprofit association is not a formal legal entity, which means that the association cannot enter into contracts, such as producer agreements, on its own or, in some cases, hold

263. APPALACHIAN REGIONAL COMMISSION, supra note 221.
264. Macy, supra note 233, at 28.
266. Id.
267. Suh & MacPherson, supra note 192 (noting that one of the conditions for registering a geographical indication is that the producers should be organized as the same legal person, which thereby “ties [them] to a common fate” to protect their collective reputation.); Definition of “collective,” MERRIAM-WEBSTER, https://www.merriam-webster.com/dictionary/collective; see also Dani, supra note 123.
ownership of intellectual property.\textsuperscript{269} Furthermore, unincorporated nonprofit associations have no shield of limited liability, which means that members may find themselves personally liable for any harm caused on behalf of other members acting on behalf of the association.\textsuperscript{270} While unincorporated nonprofit associations closely mimic the flexible, informal nature of a collective, the informality of organizational structure and governance might lead to difficulties in decision-making.\textsuperscript{271}

Member-managed LLCs do have the benefit of offering limited liability protection for members and can be structured without any hierarchical governance structure.\textsuperscript{272} However, if membership of the LLC changes over time, the operating agreement must be closely drafted and revised to avoid situations where certain stakeholders are given more control than other members.\textsuperscript{273} For example, the LLC might want to prevent wealthier industrial groups from exerting too much influence and control over smaller, artisan farmers.\textsuperscript{274} LLCs also have a broad range of fundraising mechanisms, including access to public and private markets, which would enable GI groups to raise funds to litigate any potential claims or deter free-riding.\textsuperscript{275}

Nonprofit organizations have the advantage of being eligible for a broader range of grant funding, but their structures are hierarchical in nature and require a board of directors, which is less compatible with the model of collective governance. Nonprofit organizations are also resource intensive and are notorious for being inefficiently managed.\textsuperscript{276}

Besides formation issues, collective organizations are difficult to operate because of inherent challenges with internal governance due to the heterogeneity of members.\textsuperscript{277} Cooperation among outside stakeholders, including local

\textsuperscript{270} See id.
\textsuperscript{271} See Dani, supra note 123, at 16.
\textsuperscript{272} David M. Steingold, Member-Managed LLCs Versus Manager-Managed LLCs, Nolo, https://www.nolo.com/legal-encyclopedia/member-managed-llcs-versus-manager-managed-llcs.html.
\textsuperscript{274} See Di Fonzo & Russo, supra note 238, at 28.
\textsuperscript{275} https://www.investopedia.com/ask/answers/062315/what-type-funding-options-are-available-private-company.asp; See Yogesh Pai & Tania Signla, ‘Vanity GIs’: India’s Legislation on Geographical Indications and the Missing Regulatory Framework, \textit{in GEOGRAPHICAL INDICATIONS AT THE CROSSROADS OF TRADE, DEVELOPMENT, AND CULTURE: FOCUS ON ASIA-PACIFIC} 333-358 (Irene Calboli & Wee Loon Ng-Loy eds., 2017) (warning about the risk of free-riding by individual producers that operate within a collective group of GI producers, who are legally entitled to produce GI-denominated products, but instead produce inferior goods to gain higher profit margins); \textit{The Free Rider Problem}, Stanford Encyclopedia of Philosophy (Oct. 13, 2020), https://plato.stanford.edu/entries/free-rider/ (The free-riding problem is when “the efficient production of important collective goods by free agents is jeopardized by the incentive each agent has not to pay for it: if the supply of the good is inadequate, one’s own action of paying will not make it adequate; if the supply is adequate, one can receive it without paying.”); see U.S. Dairy Export Council et al. v. Interprofession du Gruyère and Syndicat Interprofessionnel du Gruyère, 2020 USPQ2d 10892 (TTAB 2020) (noting the expense of litigation in maintaining control over the GI).
\textsuperscript{277} See https://www.sciencedirect.com/science/article/pii/S0167268121000767
governments, experts, and developmental organizations, might be cumbersome to organize, and it might be difficult to sustain relationships over time. Cooperation among producers may result in disagreement and deadlock when those producers have widely disparate priorities and resources. There might be practical problems in physically coordinating membership among producers, suppliers, and manufacturers across an extensive geographic region. Also, in the absence of a hierarchical governance structure and organizational leadership to inform decision-making, forming a company and raising funds with a large group of members with diverse opinions would be time-consuming and possibly fruitless.

One solution to these collective governance and organizational formation challenges is to form a decentralized autonomous organization, otherwise known as a DAO. Although there is no single, commonly agreed-upon definition, a DAO can be thought of as:

[A] blockchain-based system that enables people to coordinate and govern themselves mediated by a set of self-executing rules deployed on a public blockchain, and whose governance is decentralized (i.e., independent from central control).278

DAOs have no central leadership, such as a Chief Executive Officer or Board of Directors, but rather, are owned and operated through collective governance of its members.279 Specific governance rules in a DAO are enforced through smart contracts that are effectuated and stored using code on a blockchain.280 DAO members typically participate in collective governance with the DAO community through instant messaging channels, such as Discord and Telegram, and vote on governance decisions using DAO tooling products, such as Snapshot.281

The DAO organizational model could be a suitable entity design for managing and controlling a geographical indication across a large multistate region like Appalachia or within smaller regional pockets. For example, compared to a traditional organization, which has a physically-situated principal place of business, a DAO operates online, potentially making it easier to coordinate members across geographically-disparate regions.282 Currently, a DAO can be legally incorporated with built-in limited liability pursuant to state legislation in Wyoming, Delaware, and Vermont.283 Setting up a DAO does require some technical skill, but in general, many DAO users find the software relatively intuitive to manage and inexpensive to use.284

The DAO model could also support the collective action framework by giving members of the DAO the power to decide how to grant voting rights to each other in a way that tactically stabilizes the internal politics within the collective.285 Member-managed governance within a setting where digital communication channels

278. Samer Hassan & Primavera De Pilippi, Decentralized Autonomous Organization, 10 INTERNET POL’Y R. 1, 2 (2021).
279. ETHEREUM, supra note 12, at 2.
280. Id.
282. ETHEREUM, supra note 12, at 2 (noting that DAOs are similar to internet-native businesses).
283. WYO. STAT. ANN. § 17-29-108; WYO. STAT. ANN. § 17-31-104(a); VT. STAT. ANN. tit. 11, § 4173; DEL. CODE ANN. tit. 6, § 18-101-1208.
operate on a 24 hour basis could also lead to new information-sharing paradigms, depending on how trust is established between members. In the context of DAOs with GI-protected products, for example, information that could be shared among GI producers might include details about prices, distribution channels, quality control, and farming techniques, which may foster innovation and reduce the need for unnecessary in-person meetings. While DAO members have the option to convene in person to conduct quality control checks for product standardization, the group identity that is established through this unique online network could invigorate a sense of community among members and put pressure on the group as a whole to maintain its reputation.

There is also evidence demonstrating that fundraising with DAOs is easier and faster than conventional methods used by traditional organizations because funds can be received via crowdfunding and cryptocurrency payment transactions from anywhere in the world. Because funding is a significant factor in managing and enforcing intellectual property rights, geographical indication initiatives from the Appalachian region could also partner with the Appalachian Regional Commission for grant funding and the marketing of products.

B. Maintaining Quality Control with Blockchain Tracing

The second major obstacle that impedes the implementation and sustainability of geographical indications is not having a strategy or the resources to maintain quality control. As noted in the case study from Boseong, South Korea, all 18 green tea producers from the designated region stated that quality management was the most salient aspect of ensuring the success of their geographical indication. Quality management has several positive outcomes, including preventing free-riding, which is the risk of individual members of a collective selling products of inferior quality. Such actions would inevitably harm the reputation of all producers in the group and threaten the collective’s economic survival. Quality control also prevents food safety issues, which is highly correlated to consumer perceptions of the quality of a product. Quality control must be implemented using the right mechanisms in order to preserve the collective reputation of the geographical indication.

287. Maina, supra note 192, at 22.
291. Suh & MacPherson, supra note 192, at 522.
292. Pai & Singla, supra note 277 (noting that quality control – and in turn the function of GIs as guarantors of and symbols assuring product quality – is central to the success of the Indian GIs regime).
293. See id.; Maina, supra note 192, at 22.
294. See Pai & Singla, supra note 192
rather than diluting it.\textsuperscript{295} These mechanisms must build trust between consumers and producers, prevent free-riding, and reduce information asymmetries about a product’s attributes and qualities.\textsuperscript{296}

At present, there is no legally-mandated inspection structure for policing or regulating certification mark standards for geographical indications in the United States.\textsuperscript{297} Some scholars have called for the establishment of an independent, neutral governmental agency for maintaining these quality standards for geographical indications after registration, while the USPTO notes that a government body or governmental-authorized entity would be able to exert control over certification marks, including compliance with these standards.\textsuperscript{298}

One solution for this regulatory vacuum could be the use of blockchain tracing technology to illuminate the transparency of supply chains.\textsuperscript{299} A blockchain is “a shared, immutable ledger that facilitates the process of recording transactions and tracking assets in a business network.”\textsuperscript{300} Use cases of blockchain tracing have provided evidence of faster and more cost-efficient delivery of products, enhanced product traceability, improved coordination between stakeholders, and increased access to financing.\textsuperscript{301} According to scholars, blockchain tracing can be described as follows:

Operating on a decentralized network structure, with its data immutability feature, the implementation of blockchain is an appropriate solution to provide better visibility with information sharing that can build technology-based trust among the supply chain stakeholders. … [B]lockchain creates a chronological chain of records of all supply chain transactions in encrypted and immutable blocks in order to facilitate material traceability.\textsuperscript{302}

Blockchain tracing could transform traditional supply chain systems, which are largely paper-based, opaque, and marred by significant information asymmetries.\textsuperscript{303} For example, experts in supply chain management highlight that the novel technology increases transparency and visibility at the operational and organizational level, meaning that information could potentially be shared simultaneously between all members of a collective, suppliers, manufacturers, distributors, logistic operators, and other supply chain partners.\textsuperscript{304} Research also highlights that blockchain tracing is best used in conjunction with Internet of Things (IoT) sensors, which operate automatically to input data from the product, such as temperature, directly on the...
blockchain. Furthermore, IoT sensors could reduce the risk of inputting incorrect data on the blockchain on account of human error and misconduct. Another benefit of blockchain tracing is that a product’s journey throughout the supply chain could be traced on a blockchain’s digital ledger to ensure that certification standards are met and that GI-protected products pass food safety inspections that are based on provenance data. Blockchain tracing could also be used to verify the authenticity of certification marks. By protecting the product’s reputation and quality, these certification audits could build trust between GI collectives and consumers. The transparency that blockchain tracing provides could also expose free-riders and, in turn, deter bad behavior, such as the production of low-quality products by producers who use subpar standards. Although there is a dearth of information regarding whether blockchain technology is being leveraged by GI collectives, there are companies in the food industry that are already using blockchain tracing systems. IBM’s Food Trust network, for example, allows for private blockchains to be customized to create a shared record of food system data. Dimitra Incorporated is another example of a company that is using blockchain to address challenges with food production and sustainability around the globe. The Dimitra platform enables farmers and producers to record information derived from drones, satellite information, IoT sensors, and qualitative observations on the blockchain.

VI. CONCLUSION

Geographical indications should not be feared by American businesses and food industry groups. Instead, the adoption of geographical indications should be taken seriously, as many individuals may find them to be a welcome reaction to the “hyper-industrialization, mass production, and standardization of ‘placeless’ food … [and] the failure to impose safety criteria, as illustrated by the spread of mad cow disease.” Moreover, the implementation of geographical indications can lead to economic opportunity for rural areas like Appalachia. Although some geographical indications already exist within the region, more investment is needed to increase public awareness of these designations and to establish the infrastructure, social networks, and technological systems that support the long-term sustainability of these initiatives. The collective groups that govern geographical indications also have an unparalleled opportunity to shape and improve the reputational landscape of Appalachia while also building valuable social capital among residents from the...
region. By embracing the use of geographical indications, the United States can return to a focus on the “local” while strengthening its relationship with the international community.