

# GEOGRAPHICAL INDICATION AND CLIMATE CHANGE: A STUDY OF CHALLENGES AND OPPORTUNITIES IN SUSTAINABLE AGRICULTURE

Arnabi Bhagat

5th Year student, Alliance School of Law, Alliance University, Bangalore, Email  
ID: [arnabibhagat@gmail.com](mailto:arnabibhagat@gmail.com)

## Abstract

*Agriculture, as we very well know, is totally based on the climate, focusing mainly on crop quality, yield and most importantly its geographical distribution all around. On the other hand, Geographical Indication [Hereinafter also referred as GI] basically defined as protection that are used for the protection originating from a specific area and attributes the quality of its origin. There are a lot of challenges that that climate changes bring forward for Geographical Indication Protection for the sustainable Agriculture. It is very noticeable that the increasing pace of climate change will definitely have a far-reaching impact on agro ecosystems and their productivity affecting the Geographical Protection too. Vide this article, the author attempts to explore the challenges and the possible opportunities that climate change provides to GIs protection for sustainable agriculture. The author will analyze the impact of climate change on agriculture production and will also focus on the need to protect GI as a tool for sustainable development. Further, the author will focus on how climate smart agriculture should be implemented to bring a positive impact for the benefits of GI and sustainable agriculture.*

**Keywords:** Climate change, Sustainable development, Geographical Indication, Agricultural Production

## Introduction

Geographical Indications are now-a-days, becoming the most important and valuable asset in the global food system. Consumers are more inclined to things that are particularly based on their own area, and high quality of the food products. Agriculture lies at the heart of the trade and sustainable development nexus<sup>1</sup>. In developing countries like India, agriculture comprises of 50% of the total GDP and also is the livelihood for the majority of residents<sup>2</sup>. But the

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<sup>1</sup>Green, Duncan, et al. "Sustainable Development, Poverty and Agricultural Trade Reform." *Agricultural Commodities, Trade and Sustainable Development*, edited by Thomas Lines, International Institute for Environment and Development, 2005, pp. 15–40. *JSTOR*, <http://www.jstor.org/stable/resrep01377.8>. Accessed 2 Apr. 2023.

<sup>2</sup>*Id.*

production and the marketing of the GIs are facing a lot of challenges due to the drastic change in the climate.

Geographical Indications on the other hand are the components of a collection of strategies that attempt to challenge the idea that, food is basically a commodity, by valuing the place of its origin of agricultural food products, also with the aim to promote the sustainable territorial development and also by reorganizing the system of agri-food<sup>3</sup>. When compared to global brands or generic products, the products having the identity tied with the product of its origin, gets extra value, and GIs recognize this value belongs to the community that over time built these products.<sup>4</sup> They have been recognized for producing a range of beneficial economic, social, and environmental outcomes, including: guaranteeing the quality and identity of products; defending the culinary and cultural heritage associated with particular regions; valuing local expertise and preserving traditional production methods; and promoting improved access to markets<sup>5</sup>.

Since, back in centuries the practice of food products being associated with the place of its origin is being continued, which enhances its distinctive traits and attributes. Historically, geographical indicators were being used by the producers as a means of defence against the practice of copying or misusing their distinctive goods. Geographical indications are being utilized as a marketing tactic more frequently these days, enabling producers to leverage the status and uniqueness of their location to market their goods and boost sales<sup>6</sup>. Few well known examples of the geographical Indications include Parma Ham, from the Parma region of Italy, Roquefort cheese, made in the Roquefort sur soulzon area of France, Champagne, made in the region of France and Darjeeling tea from India.

Many European Nations adopted the norms for providing the judicial protection to the product of origin, back in 20<sup>th</sup> century. However, Protected Geographical Indication and Protected Designations of origins were only officially be regulated by the European Unions in 1992<sup>7</sup>. Later in 1994, World Trade Organization (WTO) ratified the Agreement on Trade Related

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<sup>3</sup> Marja Zattoni Milano, Ademir Antonio Cazella, Environmental effects of geographical indications and their influential factors: A review of the empirical evidence, *Current Research in Environmental Sustainability*, Volume 3, 2021, 100096, SSN 2666-0490, (<https://www.sciencedirect.com/science/article/pii/S2666049021000724>).

<sup>4</sup>Van de Kop, Petra, Denis Sautier, and Astrid Gerz. *Origin-based products: Lessons for pro-poor market development*. Vol. 372. The Royal Tropical Institute-KIT, 2006.

<sup>5</sup>*Id.*

<sup>6</sup>*Id.*

<sup>7</sup>SANTILLI, JULIANA."As Indicações Geográficas: Um Instrumento Jurídico e Econômico para valorizar os produtos da biodiversidade." *PNMA* 30 (2011): 127-146.

Aspects of Intellectual Property Rights (TRIPS), and thus as a result of it all the signatory Nations are now subjected to its regulations related to Geographical Indications (GIs)<sup>8</sup>.

Since, India became signatory to World Trade Organization (WTO), in 1995, the issue of India's Intellectual Property Right is being on major concern and is an ongoing discussion too. The importance of GI also cannot be overlooked in this growing economy as the reputation, quality and quantity all are interlinked to each other<sup>9</sup>. After the incorporation of the TRIPS Agreement, numerous non-European countries have implemented the GI recognition regime. As per the Global Inventory of Intellectual Property held in 2018, received from the 95 authorities, in total there were 65,900 GIs were in force, including GIs being protected by the Sui generis systems<sup>10</sup>.

In countries like India, the interest and the sentiments along with it becomes commercial, when their geographical indication or old traditional knowledge gets exploited just with the name of commerce, economy, technological advancement etc<sup>11</sup>. As a mechanism to protect and promote the rights of local communities over their biological resources and knowledge, a country can also enact legislation to establish such rights. The community is declared and recognized as the owners of community knowledge<sup>12</sup>. They hold this right as custodians for past, present and future members of the community<sup>13</sup>. Though, GI nowadays being a target study, the environmental performance and the sustainable development of it got the limelight very recently, with varied and contrary results.

Briefing with the concept, the main objective is to bring out the impact of the increasing climate change on agricultural production and its implication for GI protection. It proves to be the major threat to the environment sustainable as well as the agricultural production and GI protection.

### **Relationship between Climate Change and Geographical Indication**

Basically, climate change refers to the weather alteration pattern, which results in increase of Carbon-di-oxide, Ultra Violet radiation, temperature, precipitation, ocean water level and also

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<sup>8</sup>*Id.*

<sup>9</sup>Soumya Vinayan, *Geographical indications in India: Issues and challenges: An overview*, Vol. 19, 119, 132 (2017), <https://onlinelibrary.wiley.com/doi/abs/10.1111/jwip.12076>.

<sup>10</sup> Supra Note 3.

<sup>11</sup>Gervais Daniel, *Spiritual but Not Intellectual? The Protection of Sacred Intangible Traditional Knowledge*, *Cardozo Journal of International and Comparative Law*, 467 (2003).

<sup>12</sup> Martin Khor, *Intellectual property, Biodiversity and sustainable Development*, 42, Zed Books Ltd, Third World Network, 2002.

<sup>13</sup>*Id.*

the forest cover. The relationship of Geographical Indication with climate is multifaceted and complex yet very crucial and meaningful. Climate changes do have a major role in the geographical indication as it directly affects the production area of the particular product. GI products may also differ and effect by the changing behaviour of the customers for the environment friendly and sustainable products. Climate change being an important issue of concern, consumer may seek out of GI products that are made in environment friendly and also sustainable manner.

The Preamble to the UN framework on climate change (FCCC) acknowledge huge concern on the adverse effect of climate change and human mankind<sup>14</sup>. The FCCC also indicated the escalated activities performed by humans that significantly surges the greenhouse gases concentration in our atmosphere, which results in atmospheric warming and indirectly effect the natural biodiversity as well as human mankind. Approx 30% of the plants and animals' varieties are at the point of risk of extinction due to the same climate change.<sup>15</sup>

During 2004-2005, Darjeeling tea became the first in India, to get the tag of geographical Indication Protection. Karnataka being at the top with the highest number of products with the GI tag<sup>16</sup>. As many varieties are used in a commonplace, the quality of agricultural products here is strongly linked with natural factors. They have influence during cultivation or during processing<sup>17</sup>. The most prominent relation between the Geographical Indication and the climate change can be seen when they put an impact on the production and the quality of the products. The GI products can definitely be referred to as terroir products as they are strongly connected to their origin via the climate, altitude, the soil<sup>18</sup>. Taking the example of GI protection on tea, Kangra tea is famous for its distinctive aroma, lightness of colour and liquor, whereas, the Tea of Darjeeling is described as having less body liquor. Also, being available in different forms depending on the category of the different leaf sizes. Thus, to obtain this variety different processing techniques are being used and it clearly justify the uniqueness of the tea produced.<sup>19</sup>

Kangra tea, the most surprising fact is that the defined production method of this specific tea consists of only the processing techniques and not at all the cultivation method, and the

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<sup>14</sup> Climate Change and Biodiversity: India's Perspective and Legal Framework, 52 JILI (2010) 343.

<sup>15</sup>*Id.*

<sup>16</sup>ManuAiyappa Kanathanda, *From food to crop, Karnataka tops GI table with 39 products*, TOI, November 28, 2017.

<sup>17</sup> Delphine Marie-Viven, *The protection of geographical indication in India*, p.125, sage publication,2015.

<sup>18</sup>*Id.*

<sup>19</sup>*Id.* at 127.

uniqueness of this is the result of the combination of all the natural factors along with the knowledge involved in the processing of the raw material.<sup>20</sup>

Thus, to provide a conclusion to the uniqueness of the kangra tea and Darjeeling tea, both reflects the combination of variety, climate, natural environment adding up the technique of processing.

Again, the GI Monsooned Malabar Coffee, is registered for a coffee which is processed in a technique that have direct link to the climatic condition, discovered that the shipping of the coffee needs considerable amount of time. After being shipped it needs to be stored in the storage area for a longer time period for undergoing a transformation which needs hot and wet weather of the Malabar Coast during Monsoon. This process is generally termed as “Monsooning”<sup>21</sup>.

Similarly, the effect of climate and its changes are not only limited to the crops and agricultural sector it also effects the handicrafts and textiles too. The availability of the raw materials as well as the quality of the raw material depends on the climate, that are required for making those handicrafts. Also, the natural factor of climate change plays a similar role in the processing process of Roquefort cheese in France.<sup>22</sup>

In conclusion, the relation between climate change and geographical indication is crucial in the context of the increasing Global warming, which directly impacts the quality and attributed characteristics of the products, originated from a particular origin. It is high time to realize the effect of these rapidly increasing change in climate, to protect and preserve the uniqueness and the quality of the product of a specific place.

### **GI and Its Importance in Sustainable Agriculture**

Since a long time, there has been a scale of stagnancy in the agricultural sector. Geographical Indication do serve as a tool for encouraging sustainable agriculture. India had shown rapid progress on the sector of agriculture in year 2005. Being in India, country well known for its rich culture and diversity, it's necessary to preserve those unique ways of sustaining for the sustainable development. Geographical Indication is the sign that are used to identify goods originated from a specific geographic area and do attribute the quality of its origin. The main

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<sup>20</sup>*Id.* at 126.

<sup>21</sup> Supra Note 21.

<sup>22</sup>Protection of Geographical Indications: National and International Perspective, 46 JILI (2004) 269

aim of GI is to provide reputation to the product originated from a specific region, bring economic boost and also promote cultural and traditional activity<sup>23</sup>.

From the past few years, the concept of Geographical Indication and the related trade and judicial controversies has started receiving, great attention from the legal point of view and also received attention in the scholarly articles, journals and books as well<sup>24</sup>. The main objective of Geographical Indication is to provide protection against the dilution of any indication. While with not the motive of “misleading the public”, there might be some use of GIs that are considered as the “free riding” on the reputation of the product obtaining GI of any region<sup>25</sup>. For example: when any protected mark is used in its translated form, i.e. with adding some extra information, to help communicate the products true origin, such as “Californian Chablis”. This kind of “free riding” is ought to be considered as against the moral ethics of ethical business practices and are supposed to tarnish the image of the product too<sup>26</sup>. Very few rates of attention is provided to the concept of geographical indication and its relation to sustainable agriculture. The European Conference of Ministers responsible for the cultural heritage in Helsinki in 1995, embraced the concept of cultural landscapes to include peoples’ tradition, cultural diversity, along with the interaction with environment and agriculture. It is particularly difficult to define the extent of natural heritage to be protected. As per Article 3 of the 2003 UNESCO convention, clearly states that “Nothing in this convention can be interpreted as..... affecting the rights and obligations of state parties deriving from any international instruments relating to Intellectual Property Rights or to the use of biological or ecological resources to which they are parties”<sup>27</sup>. Some of the famous authors have even pointed out that the extension of article 23 of TRIPS Agreement to all geographical indication could be based on the relevance of cultural identity as public domain. <sup>28</sup>

Geographical Indications were not explicitly designed to protect the agro-biodiversity, which leads to limited discussion of the effect and assessment of GI products and environment is limited. Further, the diffusion of these legal categories not only in the western nations but also

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<sup>23</sup> Geographical Indication: A Journey of Indian Exclusiveness, 4 *JIPL* (2019) 81.

<sup>24</sup>Parasecoli, Fabio, and Aya Tasaki. “Shared Meals and Food Fights: Geographical Indications, Rural Development, and the Environment.” *Environment & Society Environment & Society*, vol. 2, 2011, pp. 106–23. *JSTOR*, <http://www.jstor.org/stable/43296989>. Accessed 4 May 2023.

<sup>25</sup>Das, Kasturi, Protection of Geographical Indications: An Overview of Select Issues with Particular Reference to India (May 1, 2007).

<sup>26</sup> Correa, Carlos, Protection of Geographical Indications in Caricom Countries, September (2002).

<sup>27</sup>Parasecoli, Fabio, and Aya Tasaki. “Shared Meals and Food Fights: Geographical Indications, Rural Development, and the Environment.” *Environment & Society Environment & Society*, vol. 2, 2011, pp. 106–23. *JSTOR*, <http://www.jstor.org/stable/43296989>. Accessed 4 May 2023.

<sup>28</sup>*Id.*

in the emerging economies would contribute to maintaining and developing the genetic resources including cultivation, harvesting, and most importantly biodiversity, which in future could turn out to boost the economy, turning into an asset with a potentially noticeable impact on rural economic development.<sup>29</sup> GI protection can help farmers to receive a fair price of their product, as the market is ready to purchase the products with unique quality and provenance with double of its price<sup>30</sup>. Thus, this incentivizes farmers to continue the production of products in more traditional manner and invest more in sustainable farming, that helps in sustainable agriculture as well as also boost the Indian economy<sup>31</sup>.

Therefore, Geographical Indication do have a potential, to become a valid tool in implementing a sustainable as well as quality-based agriculture provided it gets the proper socio-political environment. Also, on the other hand, the implementation of the geographical indication could increase the commercial valuation of the crops yield and avoid their disappearance in the low crop productivity, high cost associated with the labour intensive methods of production, also lack of transmission of necessary know how's.<sup>32</sup>

### **Placing Reliance in European Union Model of GI**

Viticulture is famous for European Nation. The EU has a very well known and established GI system for wine which makes sure that the consumer are not misled with the quality, authenticity, the place of origin of the product that they are purchasing. This system of GI helps in marketing their product value too. There are total 5 bioclimatic indices for the cultivation of grapes. The following are the indices for the same<sup>33</sup>:

1. Growing season Precipitation.
2. Length of the growing season.
3. Index of Latitude and Longitude.
4. Hydro thermic Index.
5. Cool night Index.
6. Dryness Index.
7. Composite Index.

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<sup>29</sup> *Id.*

<sup>30</sup> Supra Note 24.

<sup>31</sup> Supra Note,23.

<sup>32</sup> Supra,27

<sup>33</sup> A. C. Malheiro, J. Santos, H. Fraga, J. Pinto, Climate change scenarios applied to viticultural zoning in Europe, 2010.

All these bioclimatic Indices are used to assess the agricultural suitability of wine-grape in the European Nations. The LGS and GSP are the most crucial components that are required for wine grapes to grow and that component of temperature is present throughout Europe. Any region where the temperature of LGS is lower than 182 d, is not at all suitable for the cultivation of wine grape<sup>34</sup>. Hence, due to the variation in the climatic condition, the production or cultivation of the agricultural products also differ greatly. The direct effects of enhanced carbon dioxide concentration are out of the scope of the present study, though there is some evidence for positive physiological effects on grapevines.<sup>35</sup> Anytime the new wine cultivation can take place at any region, the meso climatic characteristics and the soil types are some of the characteristic of climate which cannot be ignored. Agricultural practices, wine production techniques, variety selection and genetic manipulation might also play a key role for the adaptation measures of the viticultural sector in response to climate change.<sup>36</sup>

India herein can also benefit by adopting the similar kind of approach just as the EU. This would require hard work on strengthening the legal framework of GI and also depends on its enforcement mechanism, those are equipped to handle the GI protection mechanism.

### **Suggestions and Conclusion**

In solving the path, towards the sustainable agriculture, the basic role here is of Geographical Indication. It acts as a tool for adaptation and mitigation of climate change in Agriculture as well as to promote sustainable agriculture.

Over all the studies mentioned above, Climate change has an adverse effect on the Geographical Indication also Geographical Indication is proved to be an important tool for promoting sustainable agriculture and preserving the unique identity of the product. The increasing effect of climate change in geographical indication can only be controlled through the method of sustainable agriculture that could possibly reduce the emission of greenhouse gases and adapt the changing climate. Also, the advancement in the field of research and development could help mitigate the effect of climate change on agricultural production.

Also, adapting the EU model of GI for the protection and promotion of traditional knowledge and the specific agricultural products, will help India to mitigate some effects of the climate change and also could be a viable strategy for India to promote their GI in the global market

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<sup>34</sup>*Id.*

<sup>35</sup>*Id. At 175.*

<sup>36</sup>*Id.*



that could help earn indirect revenue to the country. However, to do so, it requires full International Cooperation and strong legal framework along with the similar climatic condition to achieve the objective. Depending on the social and economic dynamics of the nation, within the different communities, variable amount of geographical indications must be kept for local use and sustainable agriculture at price that must be accessible to all, in order to maintain the cultural significance, growth of the economy as well as promoting sustainable agriculture.

Lastly, awareness within the community and the public awareness about the increasing climate change and its effect on agricultural production which indirectly effects the Geographical indication is important. The importance of preserving the community's cultural heritage and biodiversity must be known to all. Overall, these are the few key point suggestions that could help mitigate the impact of climate change on geographical indication of agricultural products and also help to support the livelihood of farmers, boosting the economy of the Nation as well as preserving the cultural heritage of the Nation too.