

CAN CLIMATE CHANGE INFLUENCE PROTECTED DESIGNATIONS OF ORIGIN AND GEOGRAPHICAL INDICATIONS FOR WINES?

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Abstract: We intend to ascertain in this article, if climate change can influence protected designations of origin and geographical indications through its impact on the characteristics of a wine. The effects of climate change are a real issue for vineyards and wine producers. We are wondering if the metamorphosis of wines induced by climate change will enhance a (re)dimension of the European PDO and PGI system from the climate adaptation perspective. As a result, we will analyze if the destructiveness of climate change could flourish in the creation of new grapes and the development of new wine-making regions and could generate any possible change in the European PDO and PGI system.

Key words: denomination of origin, wine, geographical indication, terroir, climate change.

We intend to ascertain in this article, if climate change can influence protected designations of origin and geographical indications through its impact on the characteristics of a wine in Europe. A protected designation of origin (PDO) for wines is a sign, which acknowledges that a particular product's "*quality or characteristics are essentially or exclusively due to a particular geographical environment with its inherent natural and human factors;*"¹ A protected geographical indication (PGI) is "*an indication referring to a region, a specific place or, in exceptional and duly justifiable cases, a country, used to describe a product [which] possesses a specific quality, reputation or other characteristics attributable to that geographical origin;*"² The connection between a specific geographical environment and the characteristics of a product is the main criterion for juridical

¹ Article 93, paragraph 1, letter a) -i) from Regulation (EU) no. 1308/2013 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 17 December 2013 establishing a common organisation of the markets in agricultural products and repealing Council Regulations (EEC) No 922/72, (EEC) No 234/79, (EC) No 1037/2001 and (EC) No 1234/2007.

² Article 93, paragraph 1, letter b) -i) from Regulation (EU) no. 1308/2013.

protection. This unique interaction is described in the technical file of PDO or PGI. As an effect, climate destructiveness can influence geographical indications from around the world.

Support for the idea is found in article 94, paragraph 1 and 2 from Regulation (EU) no. 1308/2013, according to which an application for a PDO/PGI shall include a technical file with information about product specification. The description of the PDO/PGI wine will consist in the principal analytical and organoleptic characteristics [article 94, paragraph 1, letter i), ii)], which are very much influenced by the climate of a region. As an example, "*Grape varieties best suited to a cool climate tend to produce wines that are more subtle with lower alcohol, crisp acidity, a lighter body, and typically bright fruit flavors. Those from hot climates tend to produce bigger, bolder wines with higher alcohol, soft acidity, a fuller body, and more dark or lush fruit flavors.*"(Gregory V. Jones, 2014) This description illustrates the effects of climate change for wine features. As a result, all the fluctuations of the wine characteristics will be fill in the technical file of a PDO, which will enhance changes in the PDO wine system.

Douro, Lisbon and Vinhos Verdes are PDO and Portuguese wine-making regions³. In a scientific study (H. Fraga, J.A. Santos, J. Moutinho-Pereira, C. Carlos, J. Silvestre, J. Eiras-Dias, T. Mota and A.C. Malheiro, 2015, p. 10 - 15) referring to grapevine phenology for these three regions, it was pointed out that climate change influences grapevine development cycle. As a result of this study, the budburst, flowering and veraison will shorten and could affect wine characteristics because of "*...high alcohol content and excessively low acidity, altered colour and aroma.*" Being in accordance with other studies referring to wines from France, USA, Australia and Germany, these outcomes underline the impact of climate change during the XXI century. As a consequence, the new characteristics of the wines must be acknowledged in the technical file of the PDOs.

The interaction between climate and wine is depicted by the word *terroir* in juridical language. *Terroir* is a French concept that describes a specific combination of the natural factors from a region, such as climate, soil and topography. (G. Adams, C.Austin, R.Baudains and other, 2010, p. 22 - 25) The balance of this combination is essential for the definition given by the European Commission: "*le goût du terroir as: a distinct, identifiable taste reminiscent of a place or locality...Foods and beverages that evoke the term terroir have signature qualities that link their taste to a specific soil with particular climate conditions. Only the land, climate and expertise of the local people can produce the product that lives up to its name.*" (Kal Raustiala and Stephen R. Munzer, 2007, p. 344)

³ <http://www.winesofportugal.info/pagina.php?codNode=18012>

As a result, the description of the interaction between climate and wine is a core element of the technical file of a PDO/PGI. We underline this through the provisions of article 32, paragraph 1, letter a) and article 35, paragraph 1, letter a) from Romanian Law no. 164/ 2015 referring to grapevine and wine. Also, article 49, paragraph 2b, from the same law, stipulates that the employees of National Office of Vine and Wine Products will verify if grapevine owners respect the agricultural and environmental conditions. According to French regulations, the connection between terroir and product qualities is an essential element of the technical file of a PDO - AOC.⁴

The unique combination of the geographical factors, from a certain space, is a prime criterion in order to obtain juridical protection for a PDO. Natural factors are essential for the acquired characteristics of a wine. Also, "*the grapes from which the product is produced come exclusively from that geographical area;*" (article 93, paragraph 1, letter a) -ii) from Regulation (EU) no. 1308/2013). If all the grapes come exclusively from a certain region, how can producers maintain their PDO protection within the climate change framework. According to article 93, paragraph 1, letter a) -iv) from Regulation (EU) no. 1308/2013, a wine with a PDO will be "*obtained from vine varieties belonging to Vitis vinifera;*". *Vitis vinifera* is a species of *Vitis*, which is known since the Neolithic period. The main area of cultivation are Mediterranean region, central Europe and South Asia.⁵ We are wondering, if famous wine-growing regions, such as Bordeaux or Champagne will cease to exist. The answer is the creation of experimental varieties of grapes that will adapt to hot summers. As an example, in Bordeaux it "*will be fermenting tiny batches of wines from an experimental vineyard growing 52 grape varieties largely unknown to the region.*" (Henry Samuel, 2015) In this context, new varieties of grapes will create wines with different qualities. Even if the geographical name registered as a PDO will be the same, the features of the wine will vary. Due to this, European world will be divided between old and new wines, old and new PDOs.

On the other hand, Henry Samuel ascribes in his article that after the experiment mentioned above "*...the grower syndicates for Bordeaux's appellations will look at the data and choose a handful of grape varieties they believe might produce a wine with characteristics typical of their appellation.*" Can a producer obtain a wine with the same characteristics in the context of climate change? The study of terroir elements reveals that "*Climate provides the most identifiable differences in wine styles for nearly all wine drinkers. The general characteristics of wines from a cool climate vary distinctly from*

4 Consult the Guide to applicant for a Protected Designation of Origin Regulations, <http://www.inao.gouv.fr/eng/Official-signs-identifying-quality-and-origin/PDO-AOC>

5 https://en.wikipedia.org/wiki/Vitis_vinifera (accessed at 2.04.2016)

those from a hot climate. [...] pinot noir is grown mostly in cool climates with growing seasons that range from roughly 14 to 16 degrees Celsius in places such as Burgundy or Northern Oregon. Although pinot noir can be grown outside these climate bounds, it readily loses the style and quality for which it is known." (Gregory V. Jones, 2014) The combination of new or old grapes varieties and climate change generates an exploratory perspective of (re)dimensioning the PDO scheme. Because grape varieties, style of a wine and geographical area are described in the technical file of a PDO, the interaction between climate change, terroir and grapes will create new PDO for wines or old PDO, as geographical name, with different wine characteristics.

Within this context, article 15 from Romanian Government Order no. 115/2010 stipulates that National Office of Vine and Wine Products could request the transformation of a PDO into a PGI, if the conditions for a PDO are no longer fulfilled in accordance with its technical file. As an effect, PGI appears to be a solution, when climate change influences a PDO characteristics.

Referring to geographical indications, "*at least 85% of the grapes used for its production come exclusively from that geographical area;*"(article 93, paragraph 1, letter b) -ii) from Regulation (EU) no. 1308/2013). A similar provision is written in article 35, paragraph 1, letter b) from Romanian Law no. 164/ 2015. Global warming will impact in a positive or negative way the 85% of the grapes from the PGI geographical area. However, 15% of grapes from a different region is not an insignificant percentage, because it seems to pave an easier adaptation to climate change. This is an advantage of a PGI in comparison with a PDO.

The interaction between the consequences of climate change and law provisions reveals that it would be preferable a less restrictive paradigm of juridical protection. This idea is expounded through a comparative research, between an appellation of origin, Roussillon from France, and a geographical indication, McLaren Vale from Australia, about the challenges that climate creates for vineyards. One of the main conclusions is that French legislation is very restrictive and discourage innovations about new grapes, wine making practices and geographical boundaries. Though, these provisions will frame a certain quality and style of the wine without legal solutions for an adaptation to climate change. As a result, the registered French PDO will disappear in the future. (Anne-Laure Lereboullet, 2013, p. 331 – 332)

The article was written, as a mosaic of references to different European countries, in order to illustrate that the effects of climate change are a real issue for vineyards and wine producers. The examples discussed above provide support for the idea that redrawing the map of PDO and PGI is not

imaginary, because of the change in the features of the wine. The destructiveness of climate change will flourish in the creation of new grapes and the development of new wine-making regions. Through this antonymic association, we would like to underline the feasible effects of climate change.

The effects of climate change are experienced in other areas on the globe. The conquest of new wine-growing regions, as an antidote to global warming, redraw the boundaries of the PDO and PGI map. (John Gladstones, 2011) Wines from South Africa obtained protection through the registration of geographical names, as a PGI or PDO, in Europe⁶. Furthermore, the new organoleptic features will have to be written in the technical file of the PDO or PGI. As a result, the same geographical names will identify wines with slightly different or novel characteristics. Though, the influence of climate change is not just an European subject.

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⁶ E-Bacchus database for geographical indications and designations of origin registered in the European Union, <http://ec.europa.eu/agriculture/markets/wine/e-bacchus/index.cfm?event=searchPThirdgis&language=EN>(accessed at 4.04.2016)

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