



Sustainable grape and wine production in the context of climate change

Bordeaux, April 10-13, 2016

The french wines AOC and the climate change

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The french AOC system : an original organisation

The system, set up in 1935, is based on close cooperation between

- a) The french public authorities,
- b) the producers grouped in “**defence and management organisations**” (ODG) for each AOC,
- c) the national institute of origin and quality (in french INAO).

The main principles for an AOC approach are based on

- A **joint** (or collective) and **voluntary** approach **coming from producers**
- Strict production conditions allowing wines to acquire specific characteristics
- Regular checks by independent bodies approved by the State



The french AOC system : an original organisation

- **To be recognized in AOC, a wine (or another product) must have a close link with the terroir from which it comes, and must present fundamental characteristics closely dues to the area from which it is originated.**
- **All the stages of the fabrication are carried out in the geographical area of production.**



The french AOC system : an original organisation

- Currently **INAO** ensures the recognition and protection of all official signs identifying the quality and the origin of agricultural, food and forestry
- **INAO** is responsible for the implementation of French policy on official signs of identification of the origin and quality of agricultural and food products: ***appellation d'origine contrôlée*** (AOC), **protected designation of origin (PDO)**, **protected geographical indication (PGI)**, **traditional specialty guaranteed (TSG)**, **label rouge (LR)** and **organic farming (agriculture biologique (AB))**.



The french AOC system : an original organisation

For examining files, the following procedure is used :

- First step : The “**defence and management organisation**” (ODG/DMO) made its proposals and transfers them to INAO.
- 2nd step : The National Comitee of INAO (mainly composed by producers and wine traders, and few representatives of ministeries) studies the proposals and vote them.
- 3rd step : The French authorities published the specifications in the Journal Officiel, who become binding decisions.
- 4th step : registration by european authorities, ensure protection of the designation in Europa



AOC present a close link with their terroir

- The AOC have a close link with their terroir, and it's necessary to use the same reference of terroir.
- In 2010 OIV has adopted the following definition :

Vitivinicultural “terroir” is a concept which refers to an area in which collective knowledge of the interactions between the identifiable physical and biological environment and applied **vitivinicultural practices develops**, providing distinctive characteristics for the products originating from this area.

“Terroir” includes specific soil, topography, **climate**, landscape characteristics and biodiversity features.



AOC present a close link with their terroir

Climate largely affects the vine physiology, agronomic characteristics (performance, composition of the grapes, wines or other vine unfermented products) : ...) and the **final quality of its products** : alcool content, acidity, balance, tanics stucture, ...

It's necessary to study the effects of climate change, and envisage strategies to limit (or avoid) the effects of climate change on the characteristics of the wines, with :

- - measures of adaptation,
- - measures of mitigation of green house gaz emissions (probably each economic sector willl have to contribute to decrease his emisisions)
- - increase the carbon storage in the soils



Currently AOC must respond to several challenges

- 1 - Take into account societal expectations on the environmental aspects and preserve the main components of their terroir ; integrate agroecological measures in the specifications to preserve the different components of the terroir.

- 2- Take into account public health concerns, in particular alcohol content

- 3 - Take into account and anticipate others themes :
 - * evolutions of the specification of the international trade and GI protection ,
 - * evolutions of the wine definition,
 - * evolutions of the new technologies in science,
 - * ...



Preserve the main components of terroir

INAO has defined 5 priorities for the environmental challenge :

- 1 préservation and development of biodiversity.
- 2 – Control of fertilisation, specially with a "comprehensive approach to reduce nitrogen mineral fertilizers"
- 3 – Reduction in the use of pesticides, including the development of the use of bio-control.
- 4 – Search for better water managements by operators.
- 5 – Use genetic more adapted to the challenge of agroecologie (new varieties)

INAO invites the ODG/MDO to engage as soon as possible an internal debate for studiing the opportunity to include deliberately some measures in the AOC regulation



Regarding the issue of the climate change

INAO also invites ODG to engage right now internal debate about the climate change : the climate change won't be identical in all the regions, and the strategies will have to be elaborated collectively by the management and defense organisations of each AOC.

But currently the first step is to **sensitize** the producers with effects related to climate change : looking for better adaptation to drought and heat wave, changing pest, research on yeasts, changes in crop establishment, sharing of territorial resources with the other residents,

...



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Possible first measures to reduce the effects of climate change, and preserve the main characteristics of the AOC wine

In short terme :

- * change the management of the soil and adapt the conditions of hydric competition between weed and vine,
- * change the ratio leaves/harvest weigh, (During the last 20th years the national comitee made decisions to increase this ratio for obtaining a better maturity)
- * ...

In longer term

- * Use varieties and rootstock more suited to excessive conditions (drough, hot temperature),
- * change the proportions of varieties
- * change the planting density, ...



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And after, in link with the intensity of climate change,
perhaps more radical measures ...

- * Change the varieties, with longer growing season
- * Change the delimitation criteria of the plots,
- * ...

- * Change the region of production
- * ...

But currently it's too early for these last measures



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Others topics could be adressed by the MDO/ODG

Test the consequences of a catastrophe scenario, with such a drought and / or a severed heat wave (and evaluate the risks)

Even to move on a process of evolution of techniques implemented, even the product characteristics change significantly

An interest of an internal debate with the conclusions of the foresight exercise on the French wine industry under climate change



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Furthermore other issues must be addressed

- **Economic themes** : Study of the evolution of production costs, inventory management related to the risk of loss of markets, interaction with consumer trends, ...
- **Regulatory aspects** : Regulation linked to irrigation conditions, characteristics of vintage products, international protection of geographical indications, ...



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Thank you for your attention

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