

Climate change and adaptation: Alsace and Loire Valley vintners' challenging point of view

Geneviève Teil

UMR SADAPT, INRA, AgroParisTech,

Université Paris-Saclay, 75005, Paris, France



This work was supported by the metaprogramme Adaptation of Agriculture and Forests to Climate Change (AAFCC) of the French National Institute for Agricultural Research (INRA)

The perception of climate change by the « actors »

- Why are actors perception of climate change (CC) interesting?
 - To watch the progress and intensity of CC
 - To confront the expected effects of CC to the reality of these effects
 - Check the vintners awareness towards CC
- Vintners are particularly interesting actors regarding CC
 - They are continuous and precise observers of their vines and all possible changes they may show
 - Long-standing small scale observations compared to climatic models
 - Adaptation experts: every year, they must produce a new wine and therefore adapt to the yearly climate changes.
 - Matching observed changes with CC: CC effects depend on viticulture practices
 - ➔ They can help interpret the observed effects

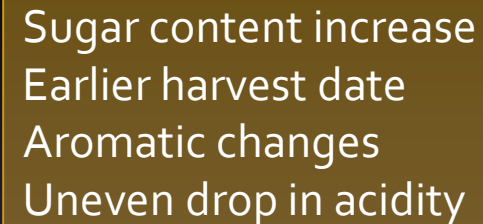


Vintners' observations & analyses

1. Increased climatic hazards
2. But no global warming effects
 - Vintners seem to be global warming-sceptical? Why?

3. They observe changes

- The expected “effects” of CC
- The reasons for these changes are many:
 - technical change,
 - commercial change,
 - regulation change...



Sugar content increase
Earlier harvest date
Aromatic changes
Uneven drop in acidity

4. **Technical change** is responsible for

- Sugar content increase
- Earlier harvest date
- Loss of balance in the different maturation processes (aromatic, phenolic, sugar & acidity content)

How do vintners adapt to changes?

- Some invent new viticulture practices
- Others ask for new resources
- Others again ask for more flexibility in the regulation
- ...

Vintners are not only **good and critical observers**

➔ Also preoccupied by **the right way of adapting to changes**

➔ Not all of them have the same conception of adaptation

1. Adaptation as compensation

- *Compensation practices aim at a predefined production objective*
 - A continuous monitoring, framing and reorientation of the vine development according to a rigidly **predefined production objective**
 - ➔ The vine development has to follow precise steps so as to meet the predefined objectives
 - ➔ The more rigid the objective, the more the vintners ask for *resources and a greater flexibility* in the PDO regulation practices constraints
- For some PDO vintners these **rigidly predefined production objectives are incompatible with PDO terroir quality**
 - The practices should better fit to the vintage climatic conditions!
 - Production objectives must respect the terroir expression!

2. Adaptation as accompaniment

- *An objective adapted to the vine development and the unfolding of the vintage*
 - A continuous monitoring, framing and reorientation of the vine development as in 1.
 - The quality objective is constantly re-appreciated with the progress of the vegetative cycle
 - These vintners are reluctant to any flexibility in PDO practices specifications → lack of terroir quality
 - The quality objective is changing with the vintage

A growing role for the vine

- An increasing debate about PDO quality within PDO vintners
 - The vine must determine the wine quality
 - It has to be protected from the erroneous vintners' conceptions of terroir quality
 - A main difference between 1. and 2.
 1. The vintner decides what the PDO quality has to be
 2. The vintner decides it along with the vine
- ➔ But the vintner may still may have an excessive influence on the interpretation of the objective to be met

3. It's to the vine to adapt!

- Obtaining the most authentic terroir expression
 - The vintner helps the vine to adapt to climatic changes
- ➔ A new very innovative conception of climatic adaptation
- The vines must be protected from the climatic excesses
 - The viticulture practices try to shelter the vine from the climate hazards by fostering the rooting of the plant in the deep layers of the soil unaffected by the superficial changes
- Vintners try to encourage the vine resistance and self-adaptation
 - With low yields no fertilizer boosting to avoid overwork and hypersensitivity
 - By restoring the complex ecological net of relations between the vine and its whole environment to enhance its compensation capacity
- Adaptation means now compensation, resistance and quality **stabilization**

Conclusion

- Global warming changes **are not** an issue for the vintners
 - Changes are mostly due to viticulture practices change
 - They have provoked the changes, they can cope with them
- Adaptation practices **are** an issue
 - Some vintners ask for new resources and more flexibility, but it's not new!
 - Not a knowledge issue
 - An issue because the **good way to adapt is of utmost importance amongst the PDO vintners.**
 - Climate change scientists conception of adaptation :
 - a compensation referring to a particular objective or quality reference ≠ terroir
 - **not necessarily the reference all vintners consider as acceptable.**
- Vintners propose a very original conception of adaptation
 - **Help nature to adapt!**
 - A human issue becoming a nature issue!

Controversies on acceptable quality variability

- 1. and 2. lead to a strong controversy on quality
 - 1. Quality has to be protected from excessive variations
 - 2. Quality has to be protected from excessive intervention
- Rigid result & flexible constraints VS flexible results & rigid constraints

 - Both are necessary and numbers should not be a clue for settling the dispute:
 - Stability (1.) → good identification of the PDO but comprises adaptation to changing world
 - Variability (2.) favours adaptation but decreases the identification power of the PDO sign
- 3. Towards a stabilization of the PDO quality?
 - The quality objective is still not predefined
 - BUT the quality stabilization is a conclusive sign of the good vine adaptation