Understanding local climatic keys to adapting/surviving global warming in viticulture

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Poster Abstract

The 2007 Intergovernment Panel on Climate Change (IPCC) report stated that warming of the climate is unequivocal and now evident from observations of increases in global average air and ocean temperatures. Although there is variability between regions, warming has been observed in different wine producing regions worldwide. Many researches on climate change and viticulture have shown that cultivars have responded to the observed warming with earlier phenological stages or dates of harvest and shortening of periods between phenological stages. Future climate projections indicate benefits for some regions and challenges for others.

Despite numerous studies on the impact of projected global warming on different regions, global atmospheric models are not adapted to regional/local scales and, as a result, impacts at fine scales are less understood. What are the local climatic keys to surviving global warming in the wine-producing regions?

In order to study the impact of warming at a wine-producing region scale, the “TERVICLIM” programme (ANR n°07194103) and the “TERADCLIM” programme (GICC2011) undertaken in 2008 and 2011 suggest a methodology which helps in:

• understanding local climate keys in various vineyards (22 vineyards) of the world (thermal measurements using tiny tags sensors along with phenological monitoring);
• assessing climate change at respective and appropriate scales using meso-scale numerical simulations at high resolution (1km-200m);
• generating a range of regional impact using the A2 and B1 IPCC emissions scenarios from the global climate model;

thus, providing guidance to decision-makers in the wine industries for short and long-term strategy.

This communication provides the methodology and several examples of preliminary results obtained for vineyards, where significant climatic differences exist over very short distances due to (for example) complex terrain or and proximity to the Ocean.

Further information available from: http://terviclim.in2p3.fr/