



Climate change and the effects on the wine industry in South America

South America has turned into an important producer of wines with a world market share of about 10%. In terms of quantity only three countries are essential: Chile, Argentina and Brazil. According to the table below Chile is now the 7th biggest wine producing country just ahead of Argentina. But while Argentina is consuming most of its production in the domestic market Chile has become a major exporter of wine.

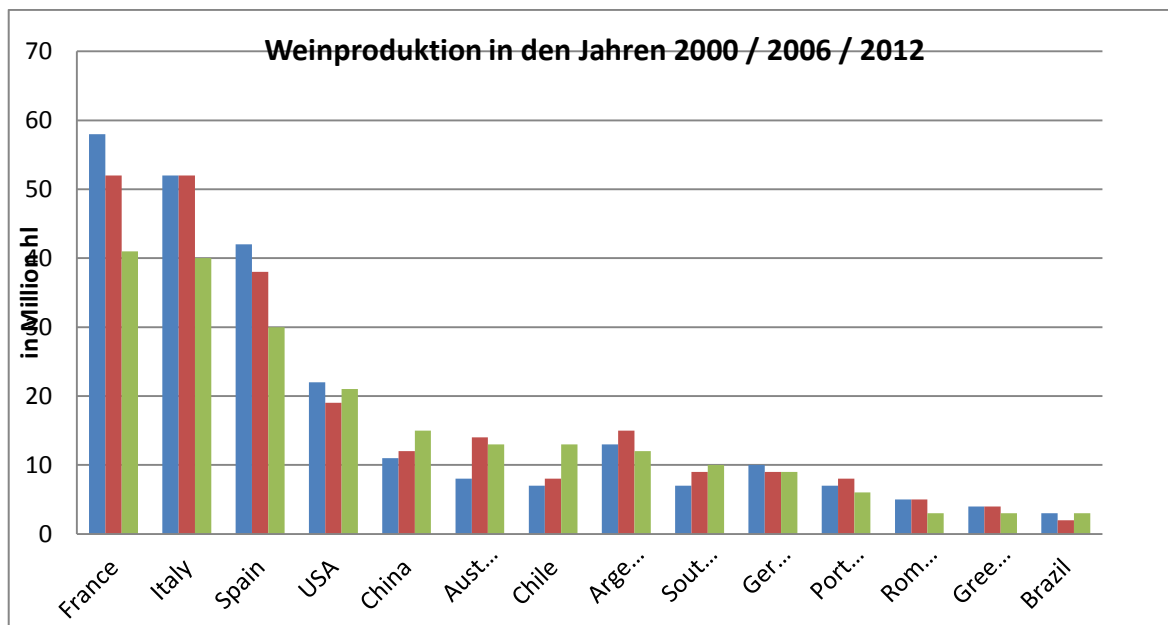
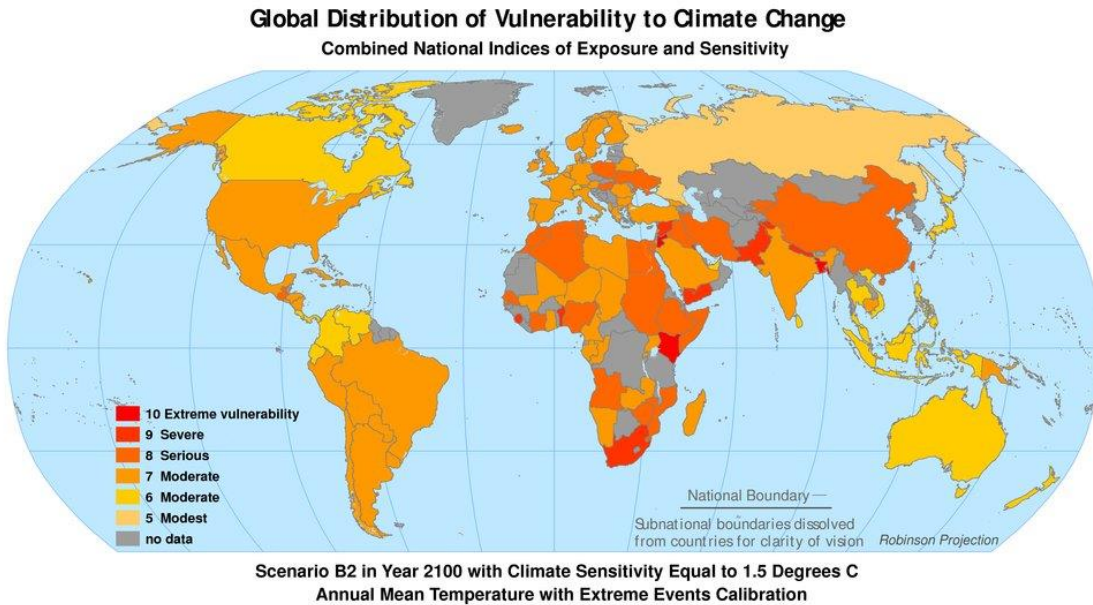


Table: Major wine producing countries, Wine production 2000 – 2012, OIV Statistical report 2013

Geographically most of the wine production areas are located East and West of the Andes. Here the maritime climate and the cooling effects of the breezes of the Andes influence the grape growing regions. These major climate influences allow for the successful production of quality grapes at comparatively low latitudes. The relationship between these two significant influences as a result of regional topography, provides the characteristic climate conditions of each production region. A feature common to all of them, however is the dry summer season which requires the use of irrigation. This comparatively low humidity provides a significant advantage: the much lower incidence of plant disease.

The climate conditions of South America are strongly dependent on the tropical oceans which influence the sub-continent's climate. A well-known driver of climate variability is the equatorial El-Niño that affects weather patterns and La Niña its negative counter-part. This anomaly happens at irregular intervals of two to seven years, and lasts nine months to two years.

The ensemble of General Circulation models (GCM) suggest for South America lower temperature increases compared to the Northern hemisphere. The different scenarios suggest an annual mean warming with increases of 1° C by 2030 and between 2,5 °C and 3,5 ° C by 2100. Rainfall projections include a significant decrease of up to 20% in Andes region.



<http://ciesin.columbia.edu/data/climate/>



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Table: World-wide effect of temperature increases in the year 2100 (source: Intergovernmental Panel on Climate Change IPCC)

The limiting factor for the future grape production will be water. South America is confronted with several problems:

- Decrease of rainfall by 20%
- Important loss of glaciers that feed the rivers and water tables
- Population increase that places additional demands on the available water

Water is a crucial issue for South America's vitiviculture. If enough water can be provided for the necessary irrigation there is big potential for a thriving wine industry.

Vomp, May 2014

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