



The loss database behind WineRisk: global infrastructure and agricultural event losses in the wine industry historically

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The WineRisk project (a global assessment of the wine industry with respect to natural perils) for over 7500 wine regions has shown that every wine region can experience a significant shock and that the hazard from one or more perils (i.e. hail, frost, severe storm, earthquake, volcanic eruption etc.) is significant across each wine region.

The wine industry has been shown to have major losses via sudden shocks such as earthquakes in Chile (2010), Christchurch (2011) and Napa (2014) and hail through Burgundy (2012-2014) as well as the April frost of 2017 across Europe.

Wineries are often prone to other major disasters such as flood, storms, frost, fire or disease causing structural failure of assets, and significant production losses.

For various natural disasters the structural engineering issues associated with wineries are examined with respect to infrastructure such as elevated steel tanks, and the past losses seen in events globally.

In this study, a database of over 2000 past events were collected across the globe with respect to the past event losses showing significant losses in places like Moldova, Argentina and New Zealand among others.

In addition, past events have been overlaid across the past global wine region and winery database of WineRisk in order to see the number of events which may be missing from the historical record. It can be shown that the 2000 events are likely a very small percentage (less than 5%) of the full record of losses likely. An example of this is that 87 earthquake events are shown to have loss statistics for wineries in the historic database, however over 1600 historic events have intensities exceeding at least VI-VII MMI at wine regions suggesting a lack of completeness. For meteorological hazards this is also the case.