



## **KLIMHIST: A Project on Historical Climatology in Portugal**

Marcelo Fragoso (1), Maria João Alcoforado (1), and João A. Santos (2)

(1) Instituto de Geografia e Ordenamento do Território, Universidade de Lisboa, Centro de Estudos Geográficos, Lisboa, Portugal (mfragoso@campus.ul.pt), (2) Centre for the Research and Technology of Agro-Environmental and Biological Sciences, Physics Department, University of Trás-os-Montes e Alto Douro, Vila Real, Portugal

Climatic variability from the beginning of regular meteorological observations is now acknowledged. However, climate change prior to 1900 is far from being well known in Portugal, except for the 1675-1800 period in Southern Portugal. An interdisciplinary team is working in the frame of the KLIMHIST PROJECT (“Reconstruction and model simulations of past climate in Portugal using documentary and early instrumental sources, 17<sup>th</sup>-19<sup>th</sup> century”), since May 2012. The main objectives of the project are: (i) to contribute to the creation of a long-term history of climate in Portugal by producing databases of documentary evidence and of instrumental data since 1645, a period of natural climate variability that includes the Maunder Minimum and the Dalton Minimum; (ii) to search systematically for the first simultaneous documentary and instrumental data in order to calibrate the series; (iii) to analyse simulated multi-decadal trends over Portugal generated by climate models; (iv) to compare results with those obtained from dendroclimatology and from geothermal studies regarding Portugal and (v) to study extreme events of the past, their impacts and the vulnerability of societies to weather during the last 350 years, and compare them with current analogues.

With these tasks, we expect to help completing the spatial coverage of past European climate, as the data gap over SW Europe is often mentioned.

As the team members come from four different Universities in Portugal (Évora, Lisbon, Oporto and UTAD), we expect to obtain a good spatial representation of documentary evidence. Teams are now progressing in data search activities in archives. An Access database frame was constructed. Some 18<sup>th</sup> century extreme events have been and are being studied (Barbara storm, Dec.1739, among others). The first workshop took place in Lisbon (October 2012): Prof Brázdil and Dr. Domínguez-Castro (two of our consultants) were keynote speakers.

Key-words: Climate reconstruction, Documentary data, Model simulations, Validation, Extreme events, Klimhist Project, Portugal