

New Dimensions in Historical Climatology. Past Climate Information from Multiproxy in a Multicultural Perspective.

R. Glaser (1), S. Vogt (1), D. Riemann (1), G. Al-Dyab (1), J. Luterbacher (2), and J. Schoenbein (1)

(1) Department of Physical Geography IPG, Albert-Ludwigs-University of Freiburg, Freiburg, Germany (johannes.schoenbein@geographie.uni-freiburg.de), (2) Department of Geography, Justus-Liebig-University Giessen, Germany

Based mainly on documentary data climate variability in central Europe has been successfully reconstructed back to about AD 1000 with an impressive degree of temporal and spatial resolution. Adding further natural proxies with a high regional explanatory power, like Wood-Anatomical-Variables for example, have been approved to dramatically extend existing time series with at least seasonal resolution into the Holocene.

Down-scaling methods applied to the data-sets hosted by HISKLID proved a highly reliable climate reconstruction even for regions where only sparse information is recently available. It was shown that the combination of different climate proxies does not only effectively extend the available climate information beyond the period of documentary data but further defines the climate signal in regions or times where the signal from documentary sources might be sparse.

The past climate variability of the Middle East has recently gained a growing interest in climate research. Besides a number of climate reconstructions using dendrochronological techniques which had recently been carried out, the concepts of historical climatology found only little implementation. However, the Middle East region harbors a wealth of documentary archives that contain detailed information on climate conditions and events. In terms of climate-related information, the Arabic and European sources showed to be similar in many respects. The authors usually report on events in their hometown and vicinity. Sometimes comparisons with remote or historical events are also made. The climatic information within a source is more or less sporadic, describing single events, especially natural hazards such as floods, droughts, and exceptionally cold or dry winters, but also diaries with one hundred or more climate related entries per year exist.

Bridging historical climatological approaches derived in the cultural context of Central Europe into the Middle East opens also a multicultural perspective:

It will be demonstrated, that the methodology of historical climatology, which has been mainly developed on the basis of European documentary sources, can be applied to Arabic sources as well. The hermeneutic approach, including critical source analysis and interpretation using information beyond the source texts, as well as classification and derivation of (semi-quantitative) indices can be in general adopted. However minor adaptations are required.

The talk will present new multi-proxy methods of climate reconstructions for Central Europe as well as their application to new climate information for the Middle East. Applying methodological approaches of Historical Climatology derived in the cultural context of Central Europe to the Middle East opens and necessitates also a strong focus on the multicultural dimension.