



Droughts and floods in the Northwest of Portugal, in the 18th Century: vulnerability and socio-economic impacts

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Nowadays it is commonly known how extreme droughts and devastating floods have a significant impact on societies, causing great material damage or even loss of human lives. Accordingly, in the past, these phenomena also caused important disruptions on populations' daily life. In what concerns to Portugal, drought and flood events have been largely studied for the instrumental period, but very little is known about the characteristics of these events in the pre-instrumental period. In most countries, including Portugal, systematic meteorological observations started, generally, in the middle of the 19th century. Prior to this date, we need to use other data sources to obtain information on weather conditions, and thus, study past climates. In Historical Climatology different types of documentary evidences are used, such as chronicles, annals, daily weather reports, newspapers, economic records, among others. From this data source we can obtain different types of information with climatic interest, such as Pro Pluvia and Pro Serenitate rogations. In this study, settled on a big set of empirical evidences, compounded in a database (more than 3500 entrances), we present the first attempt to reconstruct pre-instrumental climate in the Northern Portugal (southwest Europe and Atlantic coast of the Iberian Peninsula) in the 18th century. We will identify severe droughts and disastrous floods and evaluate their socio-economic impacts, for example, on agriculture, crop production, material property and human health. The results obtained reveal a high spatiotemporal variability of precipitation with important impacts on natural environment and human activity.