



Meteorological and hydrological extremes derived from taxation records: case study for south-western Moravia (Czech Republic)

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Meteorological and hydrological extremes (MHEs) cause great material damage or even loss of human lives in the present time, similarly as it was in the past. In the Czech Lands (recently the Czech Republic), systematic meteorological and hydrological observations started generally in the latter half of the 19th century. Therefore, in order to create long-term series of such extremes, it is necessary to search for other sources of information. Different types of documentary evidence are used in historical climatology and hydrology to find such information. Some of them are related to records connected with taxation system. The taxation system in Moravia allowed farmers to request tax relief if their crops have been damaged by MHEs. The corresponding documents contain information about the type of extreme event and the date of its occurrence; often also impacts on crops or land may be derived. The nature of events leading to damage include particularly hailstorms, torrential rain, flash floods, floods (in regions along larger rivers), less frequently windstorms, late frosts and in some cases also information about droughts or extreme snow depths. However, the results obtained are influenced by uncertainties related to taxation records – their temporal and spatial incompleteness, limitation of the MHEs occurrence in the period of main agricultural work (May–August) and the purpose for which they were originally collected (primarily tax alleviation, i.e. information about MHEs was of secondary importance). All these aspects related to the study of MHEs from taxation records are demonstrated for five estates (Bítov, Budkov, Jemnice with Staré Hobzí, Nové Syrovce and Uherčice) in the south-western part of Moravia for the 18th–19th centuries. The analysis shows importance of taxation records for the study of past MHEs as well as great potential for their use.