



Assessing vulnerability to drought: identifying underlying factors across Europe

Julia Urquijo, Itziar Gonzalez Tánago, Mario Ballesteros, and Lucia De Stefano

Facultad de Ciencias Geológicas, Departamento de Geodinámica. Universidad Complutense de Madrid, Madrid, Spain
(juliaurquijo@gmail.com)

Drought is considered one of the most severe and damaging natural hazards in terms of people and sectors affected and associated losses. Drought is a normal and recurrent climatic phenomenon that occurs worldwide, although its spatial and temporal characteristics vary significantly among climates. In the case of Europe, in the last thirty years, the region has suffered several drought events that have caused estimated economic damages over a €00 billion and have affected almost 20% of its territory and population.

In recent years, there has been a growing awareness among experts and authorities of the need to shift from a reactive crisis approach to a drought risk management approach, as well as of the importance of designing and implementing policies, strategies and plans at country and river basin levels to deal with drought. The identification of whom and what is vulnerable to drought is a central aspect of drought risk mitigation and planning and several authors agree that societal vulnerability often determines drought risk more than the actual precipitation shortfalls. The final aim of a drought vulnerability assessment is to identify the underlying sources of drought impact, in order to develop policy options that help to enhance coping capacity and therefore to prevent drought impact. This study identifies and maps factors underlying vulnerability to drought across Europe.

The identification of factors influencing vulnerability starts from the analysis of past drought impacts in four European socioeconomic sectors. This analysis, along with an extensive literature review, led to the selection of vulnerability factors that are both relevant and adequate for the European context. Adopting the IPCC model, vulnerability factors were grouped to describe exposure, sensitivity and adaptive capacity. The aggregation of these components has resulted in the mapping of vulnerability to drought across Europe at NUTS02 level. Final results have been compared with data from the European Drought Impact Report Inventory. For specific hotspots vulnerability factors are presented also through spider diagrams in order to allow policy and decision makers to identify underlying sources of vulnerability in the European context. This assessment offers an overall picture at a European level that strives to contribute to enhance the understanding of drought vulnerability across Europe.