



Application of GIS tools: Drought vulnerability in Somogy county, Hungary

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Drought is one main feature of the Hungarian climate. It happened several times in the past, but it also occurs nowadays, too. Among natural hazards beside floods and inland waters drought caused important problems in the few past decades in Hungary. It affected different fields of the national economy, agriculture, society, etc. Its damages tend to become greater and greater. Dry climatic periods in the past decades have drawn attention on research to understand the evolution of droughts. Preparations for drought periods as well as effective mitigation strategies have important economic values due to the multimillion dollars damage that a drought event may cause. It is important to study drought vulnerability of a certain area to be able to develop useful drought vulnerability mitigation strategies.

In this work drought vulnerability of Somogy county in Southwest Hungary (the study area) has been determined using data sets characterizing soils, land-use, height of groundwater level, geomorphology of the area (or radiation) and by studying recent (few decades) climatic conditions. We have tried to find out more suitable key factors to determine drought vulnerability. We have worked out a scheme through which we have been able to produce drought vulnerability map in an easy way. Every key factors have got subjective numeric value. From these key factors we have made maps, and after it we put them on each other, and the values of masking cells were added. Finally, the summations were re-classified, and with this we made the drought vulnerability map of the land. We have developed the thematic maps with the use of GIS software such as Surfer (by Golden Software Inc.) and ArcView (by ESRI Inc.). Following the presented drought vulnerability map, a mitigation plan could be prepared for the given areas. The map format of drought vulnerability is a powerful and easy-to-understand tool for non-specialist decision-makers (e.g. members of city councils, designers of rural environment) working in local communities. Using these maps, drought mitiga-

tion could be more effective and therefore more economical. Therefore, the drought sensitivity map is a very valuable factor of sustainable development.