



SEERISK: A risk assessment methodology for climate change related hazards-mapping heat wave risk in Romania.

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Climate change is expected to alter the magnitude and frequency of a number of natural processes and to affect the spatial and temporal pattern of associated hazards and their consequences significantly. Within the EU-funded project SEERISK “Joint disaster management risk assessment and preparedness for the Danube macro-region” a common methodology for risk assessment and mapping for climate change related hazards has been developed. The methodology is in line with the EC Guidelines for Risk Assessment and Mapping and it provides alternatives in order to tackle the problem of varying data quality and quantity. The methodology has been initially developed in a general form but it has also been adapted to be used for specific hazard types such as heat waves, floods, drought, extreme winds and wild fire and has been applied in six case study areas in south east Europe. In the present study the application of the methodology in the city of Arad for heat waves is presented.

The city of Arad is located in the north-eastern part of Romania and has often been affected by heat waves in the past. Based on meteorological data and data regarding emergency services interventions in past events during the night- and the daytime, two hazard and two impact maps were developed respectively as well as a risk matrix for the night- and the daytime. The hazard maps were based on the Urban Heat Island index (UHI) and the associated likelihood and the impact maps were based on numbers of paramedic interventions. The merging of the two maps results in a heat wave risk map that can be used by the emergency planners and services in order to prioritise their actions and focus on the hotspots as far as potential victims are concerned. The results of the case study apart from providing a tool for decision makers and emergency planers, also demonstrate the applicability of the common risk assessment methodology developed as being a profound theoretical basis for distinct risk mapping exercises.