



## **Evaluation of risk perception using experimental graphic semiology**

**K. Serrhini** (1), S. Fuchs (2), Karl Spachinger (3), Wolfgang Dorner (3)

(1) Université François-Rabelais, UMR 6173 CITERES, Tours, France, (2) University of Natural Resources and Applied Life Sciences, Vienna, Austria, (3) University of Applied Sciences, Deggendorf, Germany (sven.fuchs@boku.ac.at)

The procedure of risk assessment emerged as an appropriate tool to analyse the impacts resulting from natural hazards. However, despite from a considerable amount of approaches and guidelines, only little work has been carried out with respect to the harmonisation of risk mapping, the information necessary, and the required quantification of possible impacts on decision-makers. A particular gap exists with respect to the perception of information provided in risk mapping for different stakeholder groups.

Within the RISKCATCH project, risk maps were created for catchments located in the Alps and the related forelands. Based on the assessment of historical and possible future development of hazard, values at risk and vulnerability, these maps were created on different scales using scenario technique. The information created was evaluated by presenting the maps to several stakeholder groups, above all political decision makers, practitioners and laypersons from European countries. The method used was based on the approach of experimental graphic semiology, reversing the traditional communication pattern from transmitter to receiver. Starting from receiver, the maps were presented to the test persons using an ophthalmic device for the record of eye movements during picture reading. The test was accompanied by a specific survey; hence, the cognitive perception of risk maps was evaluated. All maps were presented to the test persons for a relatively short time period to identify the most attractive components of each map. The eye movements were subsequently statistically analysed in order to assess patterns of visual perception for each map and to study the reading

behaviour for text elements included in the maps. The visual strategies of each test person were quantified.

The study resulted in guidelines of how to include information on natural hazard risk for different stakeholders, in particular with respect to visual information contained in risk maps. Thus, the results of the study can be used by administrative bodies for communication strategies within the concept of integral risk management, in particular with respect to non-structural flood mitigation.