



THE CONCEPT OF SUSCEPTIBILITY AS RAPID TOOL FOR LAND'S HYDRAULIC PROTECTION AND GOVERNANCE: The case study of Apulia region (Italy)

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In Italy, the concept of “flood hazard” is adopted to map areas inundated with a fixed frequency or return period, as established by the European Directive 2007/60/CE (Flood directive), and the following Italian laws. The result is the production of “Hydrogeological Structure Plans” (PAI), and later, following the flood directive, “Flood Risk Management Plans” (PGR), which however cover only main rivers and not secondary rivers and water bodies. In addition, these plans consider the presence of hydraulic defense works (levees, quay walls, drainage canals and detention basins), perfectly functioning, and assume the isofrequency between precipitation and the correspondent flood. Thus, while these plans respond to national laws, they may not provide a clear vision of the inner fragility of the territory.

Here, the concept of “susceptibility” is used to map the flood prone areas. The susceptibility defines the probability of a territory to be flooded, and generally is determined according to its geo-litho-morphological and climatic characteristics, regardless of any hydraulic defense work.

We considered Apulia region (Southern Italy) as case study. We tested different methods to quantify susceptibility and different geo-litho-morphological and climatic as key factors. We used different data including refund requests made during the commission management of national emergencies, satellite surveys and historically collected information on flood areas.

The preliminary results are encouraging and seem to support the use of susceptibility as simple and useful tool for the management of hydraulic risk and the flood emergencies.