



Gender, age and circumstances analysis of geo-hydrological fatalities in Italy

Paola Salvati (1), Mauro Rossi (1), Olga Petrucci (2), Cinzia Bianchi (1), Aurora A. Pasqua (2), and Fausto Guzzetti (1)

(1) CNR, IRPI, Perugia, Italy (paola.salvati@irpi.cnr.it), (2) CNR, IRPI, Rende, Cosenza, Italy

Destructive geo-hydrological hazards, like floods and landslides, are frequent in Italy and cause harm to people every year. To determine the dependence of the fatalities on gender and age, we analysed data on 771 flood and 1292 landslide fatalities that occurred in Italy, as a consequence of meteorological extremes in the 50-year period 1965-2014. The distribution of the fatalities by age and gender was compared to the national census data, to identify the age and gender classes more vulnerable to geo-hydrological hazards. We found that in Italy males are more vulnerable to floods and landslides for most of the age categories. To account for the demographic and socio-cultural changes over time, we performed separate analyses splitting the data temporarily into two non-overlapping subsets of 25 year each. Analyses show that the over-representation of males compared to the females, both for flood and landslide, is statistically significant and does not vary in time. This suggests a different propensity towards the risk taking and a different degree of exposure between males and females. The dynamics and the circumstances of death by gender and by hazard type were analysed to identify the more dangerous human behaviors. The majority of the flood fatalities occurred outdoor, whereas landslides fatalities frequently occurred indoor outlining the different hazards dynamics. Floods killed numerous people along roads and drivers or passengers travelling in vehicles proving an inadequate risk awareness and perception. The results of this work can be helpful to design recommendations for self-protecting actions, and proactive policies and to reduce the human toll of floods and landslides in Italy and elsewhere.