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Comparing flood mortality in Portugal and Greece under a gender and age perspective

Susana Pereira (1), Michalis Diakakis (2), Georgios Deligiannakis (3), and José Luís Zêzere (1)

(1) Institute of Geography and Spatial Planning, Universidade de Lisboa, Lisboa, Portugal (susana-pereira@campus.ul.pt), (2) Faculty of Geology and Geoenvironment, School of Sciences, National & Kapodistrian University of Athens, Athens, Greece, (3) Mineralogy – Geology Laboratory, Department of Natural Resources Management and Agricultural Engineering, Agricultural University of Athens, Athens, Greece

Flood mortality is analyzed and compared between Portugal and Greece. Flood fatality incidents are explored and compared in terms of their temporal evolution, spatial distribution, deadliest flood types, surrounding environments, gender and age of the victims.
A common flood fatalities database for the period 1960-2010 was formed by merging the DISASTER database for Portugal and the Greek database previously built from documental sources. Each entry of the database, corresponding to a flood fatal incident has the following attributes: (i) ID number of the flood case; (ii) the flood type (riverine flood, flash flood, urban flood, or not defined type); (iii) date (day-month-year); (iv) location (x and y coordinates); (v) number of fatalities; (vi) surrounding environment where the flood fatal incident occurred (i.e. outdoors on foot, outdoors inside a vehicle, or inside a building). (vii) gender of the victim (male, female, or gender not reported); (viii) age of the victim (< 15; 15-29; 39-44; 45 – 64; >65 years).
Excluding the outlier 1967 flash flood event occurred in the Lisbon metropolitan area that caused 522 fatalities, Portugal recorded 114 flood fatalities (related to 80 flood cases) and Greece registered 189 fatalities (related to 57 flood cases). Results identified decreasing mortality trend in both countries, despite some fluctuations irregularly distributed over time. Since the 1980's the number of flood cases with multiple fatalities has been gradually decreasing.
In both Greece and Portugal flash floods were responsible for more than 80% of flood mortality and the main metropolitan areas of each country (Athens and Lisbon) presented a clustering of fatalities, attributed to the higher population density combined with the presence of flood-prone areas. Indoor fatalities have been gradually reducing with time, whereas vehicle-related deaths have been rising in both countries.
In both countries the majority of flood victims are males, indicating that males are more vulnerable to fatal floods. These gender differences can be explained by cultural reasons that expose men to hazardous occupations or risk behaviors, or underestimation of risk.
Furthermore, the victims' age distribution showed in Greece a prevalence of decedents over 65 years old in comparison with the general population. Individuals younger than 15 and older than 65 years old recorded a gradual decrease within the period studied. Both groups recorded more than half of the victims (54.5%) in the 1960–1970 decade, and gradually decreased to 15.1% in the 2001–2010 decade. In Portugal in the last 3 decades a reduced number of young fatalities (<15 years) was registered, while the age class 45 – 64 years registered the highest number of fatalities. In Portugal a prevalence of men's mortality in all age groups was found, except in the age class >65 years, where female population is dominant in the elder ages.
Both countries showed very similar trends in most parameters examined. Older victims and males were found more vulnerable as in most of the relevant literature.

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