



A descriptive impact analysis of high impact weather related incidents in Greece for the period 2001-2011

K. Papagiannaki , K. Lagouvardos, and V. Kotroni

National Observatory of Athens, Institute of Environmental Research and Sustainable Development, Athens, Greece
(kotroni@meteo.noa.gr, +30 210 810 3236)

The study introduces the development of a database of high impact weather related incidents that occurred in Greece since 2001. Data collection covers all the reported incidents of flood, flashflood, hail, snow/frost, tornado, windstorm, heat wave and lightning with adverse consequences (excluding those related to agriculture). The database includes, among others, the geographical distribution of the incidents, relevant meteorological data, a brief description of the induced impacts and references in the press. Based on the collected data, an extensive analysis of the temporal and spatial distribution of high impact weather events for the period 2001-2011 has been carried out, taking into account the estimated magnitude and intensity of weather conditions and the consequent impacts on society.

The annual distribution of incidents showed considerable variations, while damaging cases were most frequently observed in October and November. Overall, 83 people lost their lives, half of which due to flash flood events. Half of the recorded high impact weather related events were flash floods, which constitute the most frequent type of the examined events throughout the period 2001-2011. In the examined period, flash floods are associated with incidents of moderate impact intensity with a percentage of 55% and with incidents of high impact intensity with a percentage of 26%. In what concerns the spatial distribution, Attica and Thessaloniki, the largest agglomerations of Greece, have been found to be the most vulnerable areas to severe weather phenomena. Flash flood was the main event with catastrophic effects in both areas, representing 62% and 71% of total events, respectively. In general, all regions with high frequency of severe weather incidents are located in the coastal zone of the country, which tends to be more heavily populated and thus more vulnerable to weather related hazards compared to inland areas.

The constructed database of high impact weather related incidents is continuously updated so as to include systematic monitoring and the required data for future long-term analysis and risk management. In addition, it is available on-line for educational and scientific purposes.