

## A methodological approach for disaster forensic investigation

Daniela Molinari (1), Francesco Ballio (1), Scira Menoni (2), Guido Minucci (2), and Marina Tamara Mendoza (2)

(1) Politecnico di Milano, Environmental and Civil Engineering, Milano, Italy (daniela.molinari@polimi.it), (2) Politecnico di Milano, Architecture and Urban Studies, Milano, Italy

Disaster forensic investigation analyses the unfolding of a disaster and attempts to identify its causes, assigning a relative weight to the different components of the risk function, that are hazard, exposure, vulnerability, coping capacity, mitigation and response to the disaster. Disaster forensic investigation can serve several aims, among them: (i) to improve disaster prevention and management from lessons learnt, and (ii) to support more effective mitigation measures in the aftermath of a disaster. Indeed, by identifying the component(s) of risk (e.g. hazard, exposure, vulnerability, and coping capacity) that weight more on the total damage it is possible to better tailor mitigation investments.

In such a context, this contribution presents the methodological approach developed within the European project IDEA (Improving Damage assessments to Enhance cost-benefit Analyses) for disaster forensic investigations. The approach comprises four steps: data analysis and structuring, identification of main damage factors (i.e. damage causes/drivers by distinguishing between hazard and vulnerability ones), investigation of links between damage and factors, and factors prioritization. The discussion is supported by a case study.