



Tsunami Vulnerability Assessment: highlighting the importance of indicator weighting through a case study in Italy

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Tsunami hazards have been responsible for two of the costliest and deadliest recent catastrophic events of the century: the 2004 and 2011 tsunamis in the Indian ocean and Japan respectively. Globally, more regions are expected to experience similar events with devastating consequences. Nevertheless, due to the low frequency of tsunami events the risk perception in areas with a long historic record of tsunamis is still very low leading to inactivity and refusal to invest in structural measures. Assessing the vulnerability of buildings to tsunamis and using the results for local adaptation measures and decision making may be a good alternative to structural protection. Vulnerability curves developed based on damage data from Japan and the Indian ocean are difficult to transfer in the Mediterranean due to different housing materials and design. In this case, indicator-based methods may be applied. Indicator-based methods consider the characteristics of the buildings in order to assign a Physical Vulnerability Index. However, different weighting of these indicators may lead to significantly different results. Two versions of a well-established indicator-based method for tsunami vulnerability assessment (PTVA) are applied at a coastal segment in Apulia (Italy). The application of two different weightings for the indicators clearly shows that different weighting may strongly influence the results of the assessment but also the related decisions for disaster management.