Geophysical Research Abstracts
Vol. 15, EGU2013-8685, 2013
EGU General Assembly 2013

Contribution of insurance data to cost assessment of coastal flood damage to residential buildings: insights gained from Johanna (2008) and Xynthia (2010) storm events

Camille André (1,2), Daniel Monfort (2), Madjid Bouzit (2), and Charlotte Vinchon (2)

(1) LETG-Brest Géomer, UMR 6554 CNRS, University of Western Brittany, European Institute for Marine Sciences, Place Nicolas Copernic, 29280 Plouzané, France (camille.andre@univ-brest.fr), (2) BRGM, Risks and Prevention Department, 3 avenue Claude Guillemin, BP 36009, 45060 Orléans Cedex 2, France

There are a number of methodological issues involved in assessing damage caused by natural hazards. The first is the lack of data, due to the rarity of events and the widely different circumstances in which they occur. Thus, historical data, albeit scarce, should not be neglected when seeking to build ex-ante risk management models.

We analysed the input of insurance data for two recent severe coastal storm events, Johanna and Xynthia, which struck the French coasts in 2008 and 2010, respectively, to examine what causal relationships may exist between hazard characteristics and the level of damage incurred by residential buildings. To do so, data was collected at two levels: from lists of about 4,000 damage records, 358 loss adjustment reports were consulted, constituting a detailed damage database. A damage typology was developed, and linked to the different damage processes at the building scale (i.e. water depth, duration and speed, waves shocks and scour).

The results show that over 75% of reconstruction costs in residential buildings are associated with interior elements, damage to structural components remaining very localised and negligible. Further analysis revealed no clear trend between costs and water depth, suggesting that uncertainty remains high in drawing up damage functions with insurance data alone.

Due to the paper format of the loss adjustment reports and the lack of harmonisation between their contents, the collection stage called for a considerable amount of work. For future events, establishing a standardised process for archiving damage information could significantly contribute to the production of such empirical damage functions. In all events, complementary sources of data on hazards and asset vulnerability parameters, including field data, will definitely still be necessary for risk analysis and damage modelling at a micro-scale.