ESC2016-291-2, 2016
35th General Assembly of the European Seismological Commission

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4–10 September 2016 Trieste

Towards an action plan for the seismic risk mitigation of the residential building stock in Val d'Agri area, Italy.

Angelo Masi (1), Leonardo Chiauzzi (1), Marco Mucciarelli (2), and Andrea Digrisolo (1)

(1) School of Engineering, University of Basilicata, Potenza, Italy, (2) National Institute of Oceanography and Experimental Geophysics (OGS), Trieste, Italy

The paper deals with a highly seismic area located in the South-West of Basilicata region (Southern Italy), along the valley of the Agri river. This area has a strategic role for Italy because about 70% of Italian oil extraction derives from local deposits. Large quantities of oil have been extracted since the '90s, thus driving the attention on two major issues. On one hand, the possible environmental impact and, specifically, the highly debated question of earthquakes possibly triggered by oil extraction. On the other hand, the possibility that the large resources deriving from the royalties on the extraction activities can be used for an extensive strengthening program accounting for the natural seismic hazard and, consequently, the possible induced seismicity.
To this end, some points to implement an action plan for the seismic risk mitigation of the residential building stock of 18 villages located in Val d'Agri area are outlined. Particularly, starting from the available building-by-building inventory of the typological characteristics, collected during previous research activities (Masi et al., 2014), the seismic risk of the involved building stock has been studied and the expected annual losses (building damage and human consequences) have been determined. On the basis of these evaluations the total repair cost has been computed and some directions for an action plan, primarily based on the reduction of seismic vulnerability of buildings, have been defined in terms of needed costs and implementation timetables.

References

Masi A., Chiauzzi L., Samela C., Tosco L., Vona M., 2014. Survey of dwelling buildings for seismic loss assessment at urban scale: the case study of 18 villages in Val D'Agri, Italy. Environmental Engineering and Management Journal, February 2014, Vol.13, No. 2, 471-486.