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Geoscience, a tool for civil protection against earthquakes

Intelligere, tueri noscendas - To understand, to identify and to protect

The European Federation of Geologists (EFG), the professional body that represents 25 national geological association members, is drawing the attention of policy makers at international, European, national, regional and local level to the paramount importance of geoscience in civil protection against natural hazards and especially in earthquakes.

The recent seismic events on Wednesday 24th August 2016 in the mountain towns and villages of Amatrice, Arquata, Accumoli and Pescara del Tronto in central Italy claimed the lives of at least 290 people and resulted in 387 documented injuries. The earthquake, with a magnitude of 6.2 was followed by at least 1,000 aftershocks. In addition to the fatalities and injuries, the extensive structural damages has left more than 2500 people homeless. This figure is expected to rise dramatically as many villages including the historic Pescara del Tronto have been extensively damaged. This area of central Italy has suffered from earthquakes in the past. In April 2009, a magnitude-6.3 earthquake hit in the Aquila region, killing 295 people and displacing some 65,000 people. The financial cost to reconstruct the area was estimated at 12 billion Euros.

The financial cost of the recent earthquake in terms of direct and indirect loss is still unknown but is expected to be significant with losses estimated to be in the region of billions of Euros. These figures are an indication of the funds that will be required every time similar events occur. These costs, stress the resources of insurers and governments and remove resources from society. Building stronger infrastructure and houses whilst expensive is only part of the solution.

Current policy concentrates on reaction to disasters, rather than taking preventive and mitigation measures. Whilst earthquakes cannot be prevented and prediction is limited, their impact can be reduced through proper zoning and implementation of building codes based on site-specific risk analysis. Uncontrolled construction in hazard-prone areas and a focus on disaster reaction will only lead to a continuous increase in expenditure. Therefore the EFG recommends to:

- 1) Integrate geological knowledge into future European Directives and national legislation;
- 2) Educate society to improve the understanding of and response to natural hazards;
- 3) Promote open access to scientific data and data products relevant to natural hazards;
- 4) Implement European coordination projects towards decreasing the seismic vulnerability of our cities;
- 5) Implementation of seismic microzonation studies to address site specific-risk.

The group of EFG experts on Natural Hazards in association with the Italian Experts is available to provide information and to make recommendations from a geological perspective.

About EFG: The European Federation of Geologists is a non-governmental organisation that was established in 1980 and includes today 25 national association members. EFG is a professional organisation whose main aims are to contribute to a safer and more sustainable use of the natural environment, to protect and inform the public and to promote a more responsible exploitation of natural resources. EFG's members are National Associations whose principal objectives are based in similar aims. The guidelines to achieve these aims are the promotion of excellence in the application of geology and the creation of public awareness of the importance of geoscience for the society.

About the EFG Panel of Experts on Natural Hazards: The group has been established in March 2003, in relation to EC initiatives on Civil Protection, DG Environment, and has since then provided many contributions to the EC.

Pavlos Tyrologou is the coordinator of this Panel of Experts is Chartered Geologist and holder of EurGeol title in the field of Engineering and Environmental Geology. He is also acting as focal point for the EFG in the working group for the European flood directive.

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