



FÉDÉRATION EUROPÉENNE DES GÉOLOGUES
EUROPEAN FEDERATION OF GEOLOGISTS
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Geoscience, a tool for civil protection against floods

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



Floods in Attiki, Greece (November, 2017)

The European Federation of Geologists (EFG), the professional body that represents 26 national geological association members, is addressing policy makers at international, European, national, regional and local level to draw attention to the paramount importance of geoscience in civil protection against natural hazards and especially in floods given the recent events in Attiki, Greece this November.

Heavy rainfall together with deforestation and human intervention such as unregulated urbanisation and illegal fill of rivers and streams have blocked natural drainage systems which resulted in a flash flood event in West Attiki. The flood damaged 955 buildings, injured dozens of people and left them homeless, but most tragically resulted in the loss of life for at least 23 persons. Streets were submerged and cars with their drivers inside were swept away. The cost of the damages caused by the flood is currently unknown.

Europe suffers on a yearly basis in both life and economic losses due to floods. The Central European floods of June 2013 led to €12 billion in economic losses across nine EU Member states. From 1980 – 2015 across Europe, the number of fatalities is calculated at 89,873 whereas the economic loss for that period in 2015 Euro values is estimated at 433 billion euros. It is expected that the average annual economic loss due to flooding will be in the range of €23.5 billion by 2050, over five times the amount for the period 2000 to 2012 (€4.6 billion).

The previous figures are indicative of the funds that are and will repeatedly be spent every year for the same reason without bringing the required result of safety. Furthermore, it prevents the release of funds for societal progress. These costs stress the resources of insurers and governments.

Flood disaster conditions are created by changes in land use and reckless building in vulnerable areas such as floodplains with subsequent failure to control flooding. Levee failures are extremely difficult to alleviate with disasters being even worse as usually there are no contingency plans for such cases. Floods damage human settlements, force evacuation, damage crops, strip farmland, wash away irrigation systems, result in

erosion of land or make it otherwise unusable. Forced agricultural development has eliminated natural obstacles such as hedges, herbaceous ditches, trees and topographic raisings. A water volume which was taking significant time to reach a river or a stream is now arriving within a few hours period.

Current policy concentrates on reaction to disasters, rather than taking preventive and mitigation measures. With climate change and the continuous increase of construction activities in hazard-prone areas, concentration on disaster reaction will only lead to continuous increase in cost. Therefore the EFG recommends to:

- 1) Integrate geology into future European Directives and national legislation.
- 2) Educate society to improve the understanding of and response to natural hazards.
- 3) Develop and install early warning systems (geo-indicators) in areas at risk.
- 4) Open access to the scientific data.
- 5) European coordination project.

The group of experts on Natural Hazards of the European Federation of Geologists is available to provide all necessary information and to make recommendations from a geological perspective, so that it will lead to a significant reduction of negative effects caused by natural disasters. For further analysis on the recent flood events, interested readers are invited to study the position paper produced from EFG and Panel of Experts on Natural Hazards and Climate Change.

About EFG: The European Federation of Geologists is a non-governmental organisation that was established in 1980 and includes today 26 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](#), the coordinator of this Panel of Experts is Chartered Geologist and holder of EurGeol title on the field of Engineering Geology and also acts as focal point for the EFG. in the working group for the European flood directive.

More information: www.eurogeologists.eu

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