

Response to WP1 (Greece)

Information for EU countries

Project title: Development of master curricula for natural disasters risk management in Western Balkan countries

Acronym: NatRisk

Project number:

573806-EPP-1-2016-1-RS-EPPKA2-CBHE-JP

Lead Organisation of work package 1: BOKU

Participating Organisation:

UNI, MU, KPA, UPKM, UNSA, VSUP, TCASU, UNIME, OE, UNID, RGU, TUC

Work package	Title
1	Analysis of natural disasters needed to be managed in Western Balkan region
Activity	Title
1.2	Survey of established practices in EU countries for NDRM

"This project has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein"

Contents

1	Natural disasters in the Western Balkans	3
1.1	Identification of natural disasters	3
1.2	Analysis of responsible institutes	6
1.3	Analysis of EU master curricula	7

1 Natural disasters in the Western Balkans

Information about established practices for natural disasters risk management in EU countries is indispensable for developing master curricula for risk management in Western Balkan regions. According to work package 1.2 (WP 1.2) a partnership between BOKU and all partners from EU countries is foreseen to close the knowledge gap about natural disaster risk management.

1.1 Identification of natural disasters

Earthquakes

Greece is an area with many earthquakes, due to the fact that the interface between European and African tectonic plates crosses the country. As a consequence, earthquakes have been one of the major natural risks through the history. The society gradually used to survive with this risk and adopted suitable measures, for example building small houses with flexible upper stories, integrating wooden elements in stone houses, leaving aseismic gaps between neighbouring buildings and so on. In the last thirty years, Greek Building Regulations have been evolved and cover efficiently this risk, at least for houses made of reinforced concrete structural elements, new buildings and renovation of older ones. Masonry buildings, which are the majority of old buildings, are partially covered, since the state-of-the art of knowledge does not yet allow us fully explain the mechanical behaviour and, at the same time, these buildings have been constructed with less or no quality control. Steel or the few wooden structures are usually earthquake-resistant, since they are lighter, although collapse of secondary elements during an earthquake, like glass facades, may become a risk.

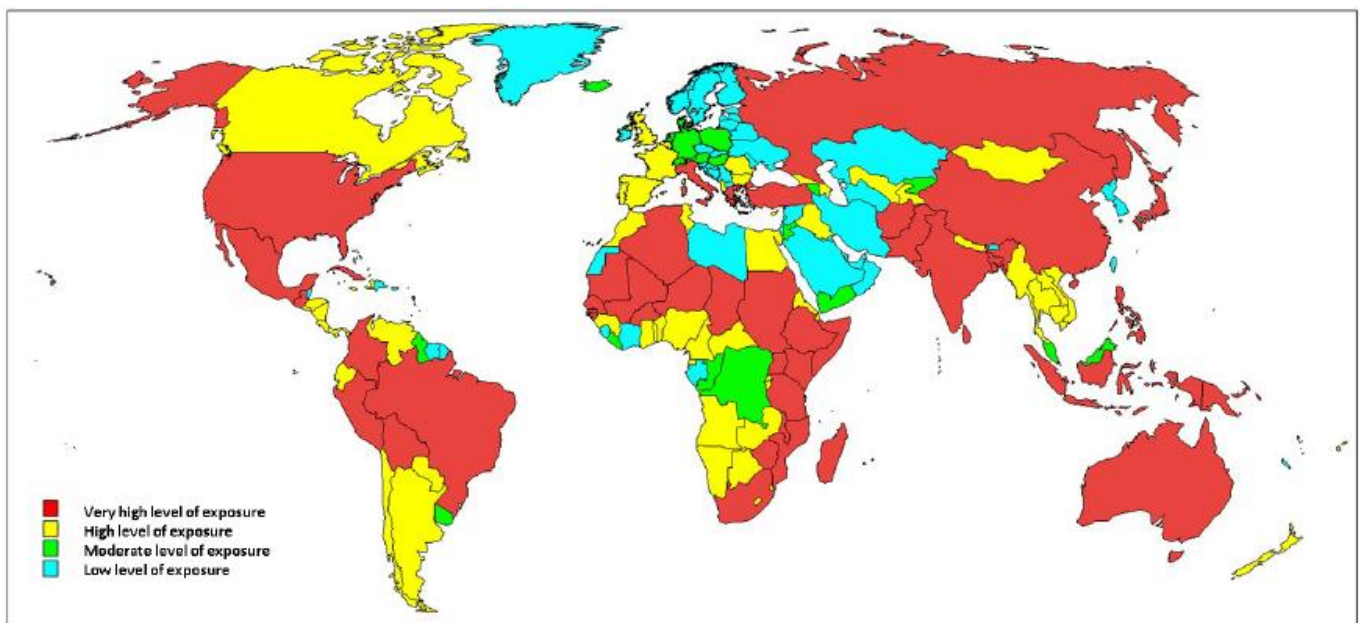


Figure 1. Map estimating the levels of exposure of the different countries to natural hazards

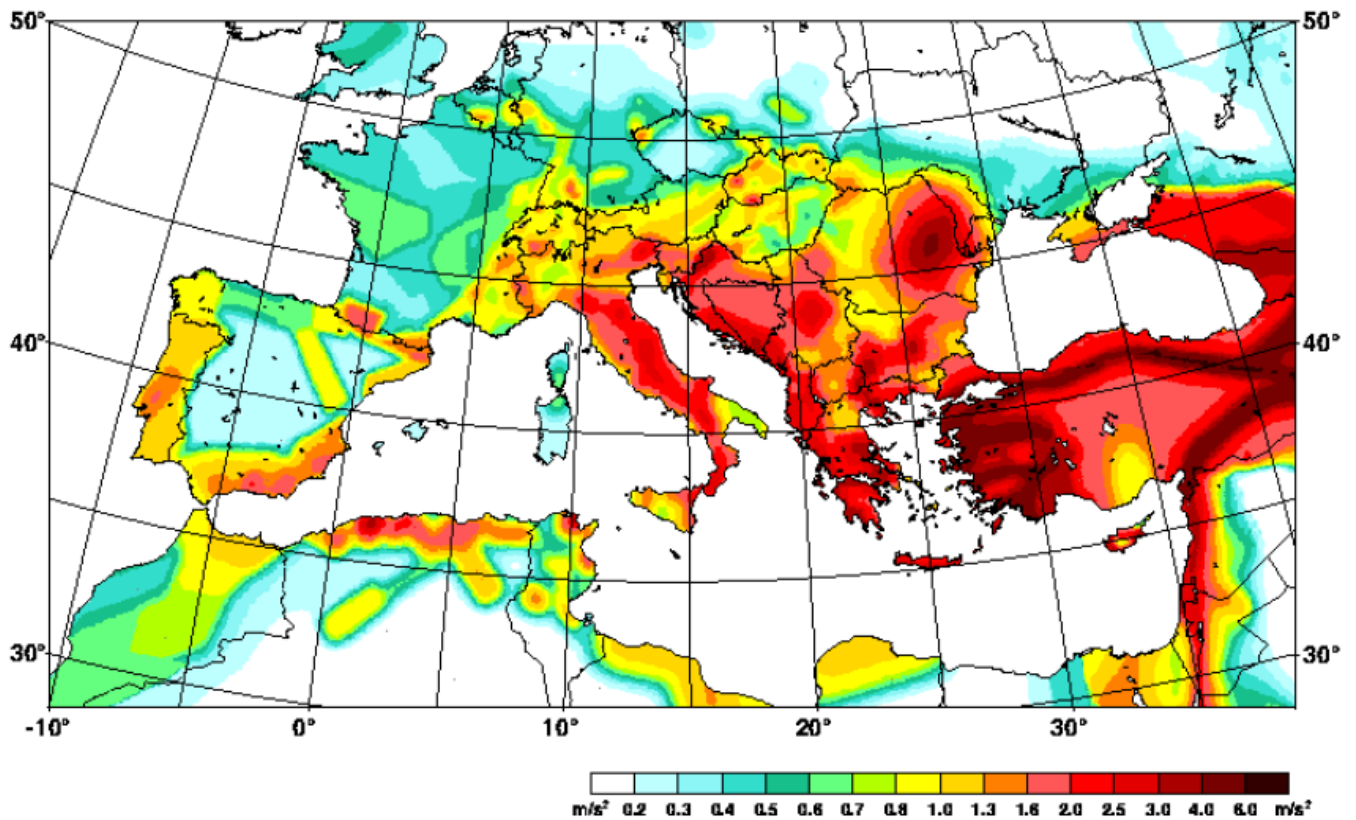


Figure 2. Regional seismic activity in Europe

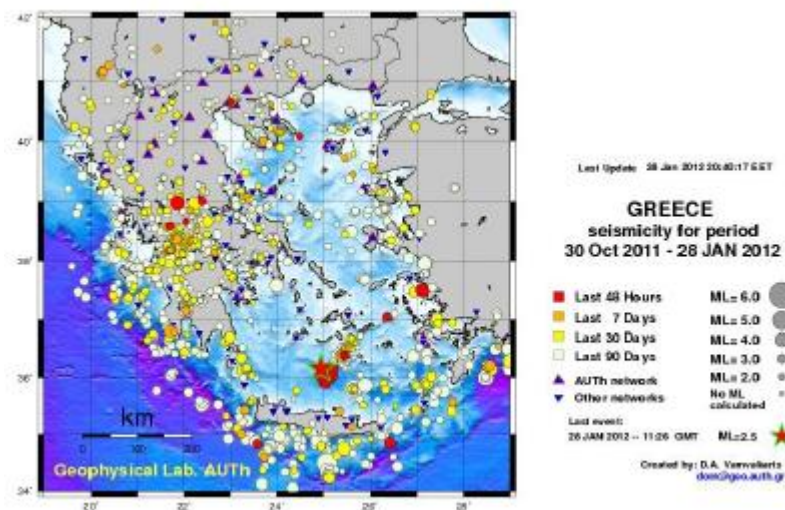


Figure 3. Earthquakes in Greece

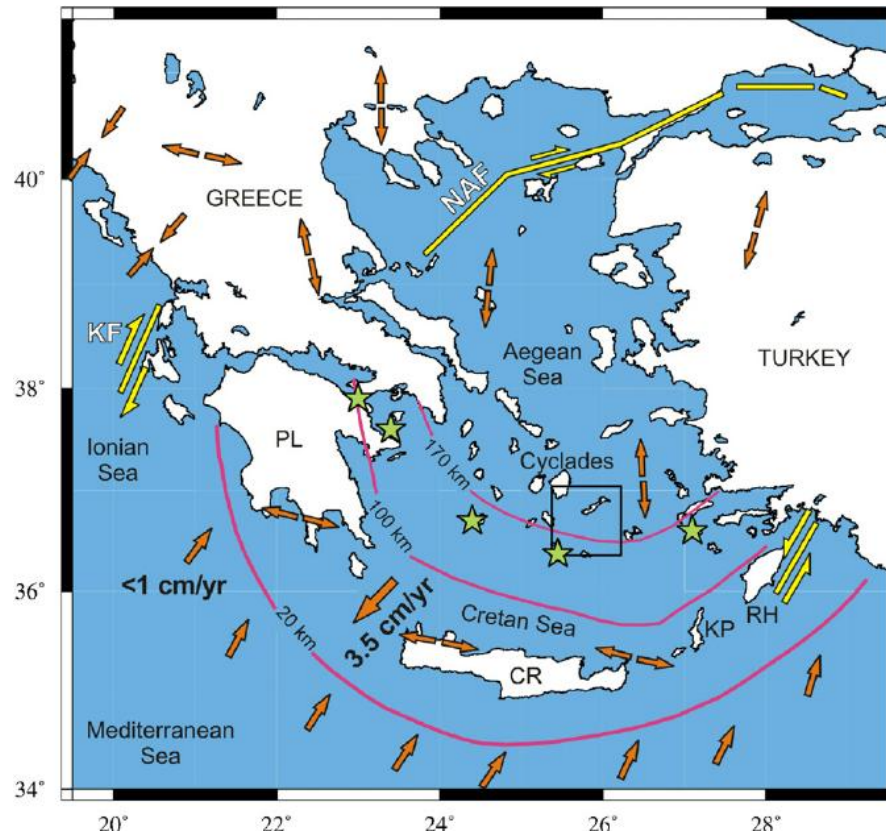


Figure 4. Tectonic plates in Greece

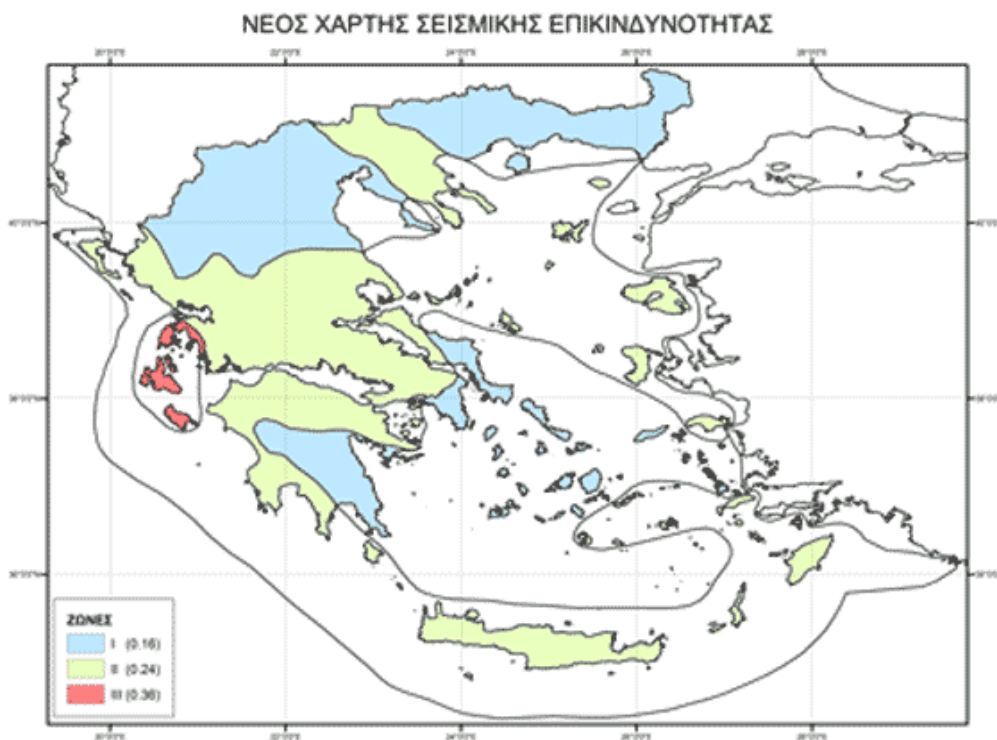


Figure 5. Earthquake design requirements in various parts of Greece

Tsunamis

Evidence that some tsunami risks appeared in the past does exist. The pre-hellenic, minoan civilization in Crete may have been destroyed from a tsunami created in the Aegais and stroke the island after an earthquake.

Fire

Ancient city-centers with narrow roads and many wooden houses traditionally suffered from big fires. A considerable part of old city in Thessaloniki has been destroyed due to a fire. Modern regulations and use of inflammable materials usually reduce this risk. On the other side, new fire thread appears, like the installation of photovoltaic installations on the top of residential buildings. Another modern risk which is expected to dominate fire engineering in Greece in the coming decades, is the fire and disaster management in on shore and off shore installations. On shore facilities do exist, off shore facilities are being expanded.

Landslides, flooding, extreme weather phenomena

Weather prediction and periodic inspection of infrastructure can prevent losses from these effects, which can not be prevented in most cases. Weather prediction services are quite well-organized in Greece. The responsible authorities work in close cooperation with international ones.

1.2 Analysis of responsible institutes

A civil protection agency of the Greek Ministry of Interior Affairs, coordinates all civil protection measures in the country and informs citizens and civil authorities involved in this issue. The agency has an informative web site in several languages, <http://civilprotection.gr/en>, where further information can be found.

Weather forecast and warning is coordinated by the Hellenic Weather Forecast authority, their web site in Greek/English provide relevant information <http://www.hnms.gr/hnms/english/index.html>.

The Organization for Aseismic Design and Protection (oasp), coordinates earthquake design, and information for citizens in Greece, see <http://www.oasp.gr/> (use Google translation integrated in the page in order to see the material in several languages). An online system for tracking earthquake activity has been created by the geophysical laboratory of the University of Athens <http://www.geophysics.geol.uoa.gr/stations/maps/recent.html>

1.3 Analysis of EU master curricula

Related Master Courses in Greece

The Technological Educational Institute of Eastern Macedonia and Thrace, together with the Fire Brigade Academy created in October 2015 a new interdisciplinary, interinstitutional Master Programme entitled "Analysis and management of man-made and natural disasters". Within this programme, four departments of the TEI-EMT are cooperating (namely the Department of Forestry and Natural Environment Management, the Department of Petroleum and Gas Engineering and Technology - Mechanical Engineering, The Electrical Engineering Department and the Management Department) as well as the School of Lieutenants in the Fire Academy. The MsC programme is addressed mainly to officers of the Greek Fire Brigade Corp and to civil servants working at the Civil Protection Departments, on modern methods against hazards coming from natural and man-made disasters. The program is open to officers and lieutenants of other Greek Armed Forces, to civil servants working in civil protection departments (holding an undergraduate degree, preferably in engineering), as well as to foreign students.

The topics presented include:

Management of threats, crises and catastrophes (Disasters and environment, evaluation of threats, scale issues),

Social and economic consequences of disasters

Natural processes, threats and disasters (geological disasters, rivers and torrents, coast disasters, stonefalls, earthquakes, volcanoes, climate changes, weather disasters, open-air fires, both agricultural and forest).

Environmental threats and technological disasters (environmental threats, technological disasters, chemical, biological nuclear threats).

Electro-mechanical disasters.

Oil leakage and spills, fires due to fires involving hydrocarbon materials.

Technical means to reduce the risk (Structural identification in classical and historical-monumental buildings, elementary structural analysis, evaluation of structural risks, earthquake response of structures, flood effects reduction in rivers and torrents, fire fight, regulations, medical first-aid design).

Usage of geoinformatics on disaster management (surveyance systems, G.P.S.).

Civil protection mechanism according to European Union rules.

Students of the MsC programm follow a three semester full-time programm, from which the third semester is devoted to the graduate diploma thesis.

Highlights of the program are: realistic education in a Control room equipped with emergency risk simulators, on-site On shore και off shore oil platform education, usage of augmented reality techniques and last but not least a solid theoretical background.

Further information related to the programm can be found (mainly in Greek) in <http://mandisastermsc.teiimt.gr/index.php>