

# Volunteers' Preparedness for Natural Disasters and EVANDE Project

A. Kourou, A. Ioakeimidou, E. Bafa, C. Fassoulas, M. Panoutsopoulou

**Abstract**—The role of volunteers in disaster management is of decisive importance and the need of their involvement is well recognized, both for prevention measures and for disaster management. During major catastrophes, whereas professional personnel are outsourced, the role of volunteers is crucial. In Greece experience has shown that various groups operating in the civil protection mechanism like local administration staff or volunteers, in many cases do not have the necessary knowledge and information on best practices to act against natural disasters. One of the major problems is the lack of volunteers' education and training. In the above given framework, this paper presents the results of a survey aimed to identify the level of education and preparedness of civil protection volunteers in Greece. Furthermore, the implementation of earthquake protection measures at individual, family and working level, are explored. More specifically, the survey questionnaire investigates issues regarding pre-earthquake protection actions, appropriate attitudes and behaviors during an earthquake and existence of contingency plans in the workplace. The questionnaires were administered to citizens from different regions of the country and who attend the civil protection training program: "Protect Myself and Others". A closed-form questionnaire was developed for the survey, which contained questions regarding the following: a) knowledge of self-protective actions; b) existence of emergency planning at home; c) existence of emergency planning at workplace (hazard mitigation actions, evacuation plan, and performance of drills); and, d) respondents' perception about their level of earthquake preparedness. The results revealed a serious lack of knowledge and preparedness among respondents. Taking into consideration the aforementioned gap and in order to raise awareness and improve preparedness and effective response of volunteers acting in civil protection, the EVANDE project was submitted and approved by the European Commission (EC). The aim of that project is to educate and train civil protection volunteers on the most serious natural disasters, such as forest fires, floods, and earthquakes, and thus, increase their performance.

**Keywords**—Civil protection, earthquake preparedness, volunteers.

## I. INTRODUCTION

RECENT years were marked by powerful earthquakes strongly hitting countries such as Haiti, Japan, Chile, and China, etc. More than 1.5 billion people have been affected by disasters in various ways, with women, children and people in vulnerable situations disproportionately affected. The total economic loss was more than \$1.3 trillion. In addition,

between 2008 and 2012, 144 million people were displaced by natural disasters [1].

The Hyogo Framework for Action has been an important instrument for raising public and institutional awareness, generating political commitment, and focusing and catalyzing actions by a wide range of stakeholders at all levels [2].

Earthquakes and other disasters strike everywhere, at any time-with little or no warning and affect regions worldwide. Greece has experienced destructive earthquakes that caused death, as well as extensive damage to buildings and infrastructure, affecting large areas and thousands of citizens.

Voluntary aid and human support have emerged as the greatest need before, during and after a disaster. Gained experience from former civil protection activities, operations and drills, has indicated that although many projects and actions have been undertaken, a lack of knowledge and weak preparedness can still be identified in volunteers acting in the civil protection field.

Nowadays, it is generally accepted that all actors engaged in civil protection should focus on a continuous process of collaboration, communication, exchange of innovative methodologies, best practices and educational approaches in order to raise awareness and improve preparedness and effective response at all levels. "Whether individuals do, or do not prepare and mitigate for future earthquake occurrences is significantly affected by the degree to which they engage in public education activities about the earthquake hazard" [3].

In Greece, the State's current efforts have a more people-centered preventive approach to disaster risk, aiming to raise public awareness, improve earthquake knowledge, educate specific target groups and build a disaster prevention culture [4].

Earthquake Planning and Protection Organization (EPPO), is a governmental organization and the competent authority in Greece to process and design the national policy on earthquake protection. EPPO contributes in the development of seismic safety culture and resilience through public awareness projects addressed to teachers, civil protection staff, volunteers, public servants, students, people with disabilities, and tourists, etc. [5], [6].

## II. OBJECTIVE-METHODOLOGY

The present survey aims to detect volunteers' level of earthquake preparedness both in the family and at the workplace. For the purpose of the present survey a questionnaire was developed on the following issues: a) awareness of self-protective actions; b) emergency planning at

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family level; c) emergency planning at workplaces; and, d) respondents' perception of earthquake preparedness.

A total of 150 questionnaires were collected and analyzed from May 2014 to May 2015. The questionnaires were addressed to respondents during the Hellenic National Project "Protect Myself and Others" that is under the supervision of the Hellenic Ministry of Education [7]. This project is running since 2001 and aims to train citizens to develop skills on risk management and emergency response, as volunteers in a local level. The theme of this project is about earthquakes, fires, sea accidents, and floods, etc. The duration of the training sessions comes up to 100 hours in three months. The EPPO is responsible for the earthquake session.

The participants of the survey are citizens involved in civil protection at local level and come from five different regions of the country (Thessaloniki, Samos, Crete, Drama and the Attica region).

### III. RESULTS

#### A. Adoption of Earthquake Protection Measures at Home

According to the results, the significant majority of the respondents (90.41%) reported having experience of an earthquake, as shown in Fig. 1, which is quite normal if we consider that Greece ranks first in terms of seismicity in Europe and sixth worldwide.

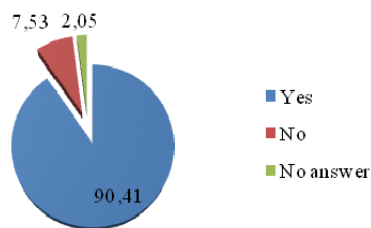


Fig. 1 Experience of earthquake (%)

Exploring respondents' personal perception on their knowledge concerning appropriate earthquake safety behaviors, it is worth noting that 68.49 % of them answered that they are familiar with the proper actions. The question on "knowledge of appropriate earthquake safety behaviors" is followed by seven more specific ones, in an attempt to explore the seismic protection measures taken at the family level. At that point sufficient deviation from the correct options was observed. More specifically, 61.64% of the respondents consider as proper action during an earthquake to take cover under an interior door frame in a reinforced concrete building, which is incorrect. Furthermore, 34.25% of participants claim wrongly that remaining still in place is the right thing to do [8]. Also 13.7% of respondents wrongly think that running towards the exit of the building during an earthquake is the appropriate self-protection action. The majority of respondents (82.19%) were reported being familiar with the "drop, cover and hold on" in the case of an earthquake, as shown in Fig. 2.

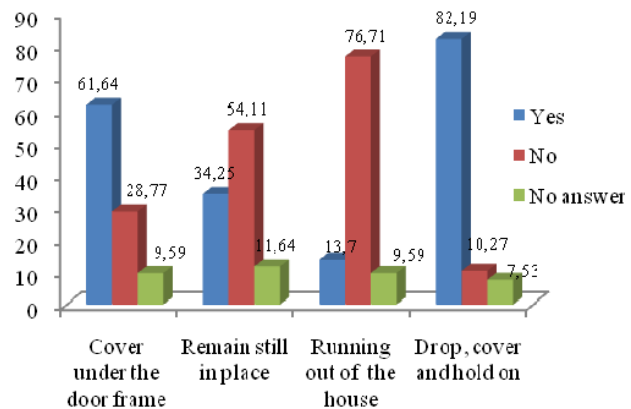


Fig. 2 Proper self-protection actions (%)

Regarding hazard mitigation at home, development of a household disaster plan, and selection of family reunification place, etc., a lot of respondents reported being aware of the protection measures, as shown in Fig. 3. For example, 59.59% of respondents answered yes to the question: "Have you fastened bookcases and closets on a wall?", while 38.36% responded negatively. To the question "Do you have any emergency supplies in place?" 51.37% of respondents said yes, while 45.21% responded negatively. Furthermore, 69.86% of respondents have identified the safest places at home, and 66.44% of them have already selected the nearest, open, safe place to meet with their family after the earthquake.

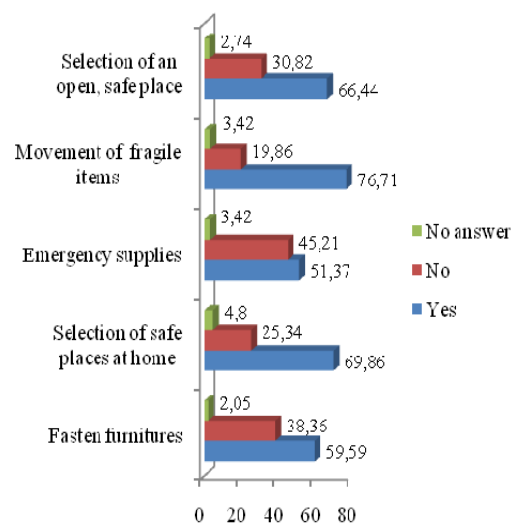


Fig. 3 Preparedness measures at home (%)

#### B. Implementation of Earthquake Protection Measures at Workplace

Regarding adoption of preparedness measures at the respondents' workplace, results collected are not very promising, as seen in Fig. 4.

Concerning the existence of an earthquake emergency plan at the respondents' workplace, it is noticed that the 20.69%

replied affirmatively, while 40% answered negatively. On the other hand, 31.03% of respondents replied: "I do not know".

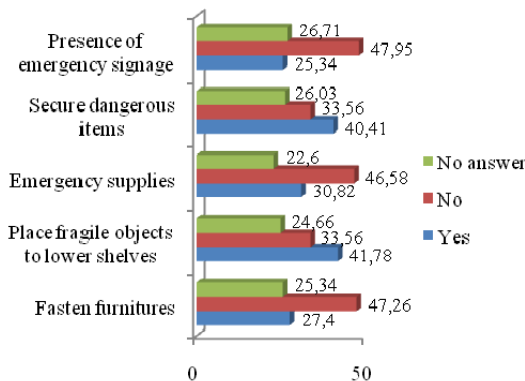


Fig. 4 Preparedness measures at workplaces (%)

The non-existence of a preparedness plan at the workplace could be due to the following reasons: a) only 34.93% of the participants confirmed that they have experienced an earthquake at the workplace; b) small enterprises in Greece do not have earthquake mitigation actions as their first priority, although emergency planning is mandatory according to the European and Hellenic legal framework [9]-[11]. For these reasons, the last two years EPPO has intensified its efforts on the training of working personnel in various workplaces. More specifically, in addition to other educational actions addressed to the public (awareness campaigns, promotion of social TV spots, etc.), EPPO cooperates with the Ministry of Labor, Ministry of Education, Legal Entities of Municipalities and others agencies, organizes seminars and develops relevant training material [12]. The objective of these initiatives is to inform various stakeholders that effective management of natural disasters requires proper information and considerable training [13], [14]. Worldwide many good plans have failed during emergencies because of inadequate dissemination and practice.

#### IV. "EVANDE" PROJECT

In order to raise public awareness and enhance disaster preparedness, it is urgent and critical that State efforts must be focused on training initiatives addressed to volunteers, civil protection staff and citizens.

Answers to the question: "Which is the educational method or tool you prefer on disaster management issues?" revealed that 60.27% of participants declared the Internet as the most appropriate tool. In recent decades, the Internet has played an essential role in raising awareness and educating people about proper actions to lessen the effects of disasters. Nowadays, the authorities often use the internet to disseminate messages on disaster preparedness and mitigation. In that case, the EVANDE project is a fruitful and useful tool that contributes to the design and implementation of social safety, improvement of public's attitudes and behavior, and

acquisition of relevant skills in the management of natural disasters.

EVANDE is the acronym of the project entitled: "Enhancing Volunteer Awareness and Education against Natural Disasters through E-learning," which is co-funded by the Civil Protection Financial Instrument of the EC, in order to contribute to the understanding of disaster risk in all its dimensions including vulnerability, and exposure of persons, etc.

##### A. The Aim

The EVANDE project aims to improve the knowledge of civil protection actors (officials and volunteers), through proper training and education on floods, fires and earthquake risk prevention and management.

In the framework of the project, pre-existing knowledge developed under European Union (EU) or national projects, scientific research and civil protection strategies should explored and analyzed.

##### B. The Partnership

The partnership is formed by European partners that have wide experience in civil protection and lifelong learning sectors. The EVANDE partnership is coordinated by the Natural History Museum of Crete-University of Crete, in Greece. The other partners include EPPO and the Technical University of Crete from Greece, Consorri De La Ribera from Spain, Beigua Nature Park and Education Centre "Villa Montesca" from Italy, and the Centre for Educational Initiatives from Bulgaria. These organizations enrich the partnership with their expertise and country-based experience.

##### C. The Actions

The EVANDE actions and deliverables include the following:

##### 1. Data Acquisition-Elaboration on the Topic of Natural Disasters and Civil Protection

Partners collect, filter, elaborate and validate existing knowledge and best practices on management of natural disasters like floods, forest fires, and earthquakes. Furthermore, they analyse intra-governmental and EU policies and strategies to mitigate risks. Also, they create publications and products (e.g. newsletters, brochures), that explain scientific information in a popular language for non-scientific staff.

##### 2. Development of E-Learning Tools and Project Training

The main outcome is a web-platform for e-learning activities that is based on the Multimedia Open Learning Environment (MOLE) [15].

The EVANDE e-learning platform will be used as a communication and educational tool, in order to make the information available to the public. The final tools will be disseminated and promoted during various project trainings and public events.

The e-learning tools and trainings developed include four web-based e-courses relating to floods, forest fires,

earthquakes and European policies. Every course includes specific didactic units, such as hazard description, risk assessment, prevention, mitigation, preparedness, response and recovery, case studies and best practices. The educational objects of each didactic unit are presented to the participants with text, multimedia presentations, lectures, practice tests, proposed activities and other resources.

### 3. Dissemination Actions

For the EVANDE project dissemination needs, four e-newsletters, brochures and publications on natural disasters and civil protection issues have been developed [16]. Furthermore, various activities will be organized (national and international trainings, public meetings), to ensure the exploitation of the project outcomes and follow-up.

### V. CONCLUSIONS

Disaster risk reduction practices need to be multi-hazard and multisectoral, inclusive and accessible in order to be efficient and effective. It is urgent to develop effective global and regional educational methods, tools and material in order to: a) raise public awareness; b) promote a culture of disaster prevention and resilience; c) generate understanding of disaster risk; d) support mutual learning; and e), share experiences. Encouragement of public and private stakeholders to engage actively in such initiatives is also essential.

In Greece, the EPPO has stepped up its efforts to build awareness, increase preparedness, ensure emergency response in working environments, and towards the safety and welfare of all.

According to results of the present survey, respondents' knowledge about self-protection actions and preparedness measures in the workplace in the case of an earthquake, still have significant room for improvement.

Achieving improved seismic safety is not only a problem but also a challenge in order to promote safety, minimize impact and assist in a speedy recovery. In that framework, the EVANDE project aims to contribute to the understanding of disaster risk and build disaster knowledge through sharing experiences, lessons learned, good practices, as well as training and education activities on disaster risk reduction. The EVANDE outcome is an Internet-platform that includes web-based seminars for floods, forest fires, earthquakes and European policies addressed to the public and specified for volunteers and civil protection operators.

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