

## What happens to the boats? A look into tsunami geoscientific literacy

Vasconcelos, C., Costa\*, J., Torres, J., Almeida, A. and Moura, A.

Geology Centre of the University of Porto / Faculty of Sciences of the University of Porto Science Education Unit, Porto, Portugal  
\*cvascon@fc.up.pt

During the 20<sup>th</sup> century almost two million people were killed by earthquakes. When the frequency of earthquakes of great magnitude is on a scale of hundreds of years, this contributes to erasing the collective memory. This view may seem contradictory, given that the Lisbon earthquake, which occurred on November 1, 1755, still seems to be an event that persists in the collective memory, may be due to the peculiar characteristics of this event, such as the great magnitude of the earthquake, the tsunami and fire, theft and destruction of emblematic places of temporal and spiritual power, especially the churches. The main objective of this study was to evaluate Portuguese citizens' scientific literacy about tsunamis. For this purpose, we conducted 206 structured interviews in a public place, asking people for their collaboration. In the beginning of the interviews, people were shown a drawn scenario with a tsunami epicentre and three boats localized in different places of the ocean. The sample was constituted by 107 females (51.94 %) and 99 males (48.06 %), with their age ranging from 12 to 85 years. The interviews, which were conducted by two members of the research team, were audio-taped for a better and more reliable transcription. Content analysis was subsequently done with the help of the Q.S.R. NVivo 10

qualitative data analysis package. Interviews contain three main questions that intend to evaluate citizens': (i) understanding about tsunamis and their consequences based on the boats' possible scenario; (ii) knowledge about tsunamis that occurred in the country, and (iii) opinions concerning the inclusion of themes related to tsunami mitigation and prevention in basic and middle school science curricula. Results showed that only 42.7 % of the respondents gave the correct answer to question number 1, revealing some knowledge concerning the phenomenon and its consequences. Regarding question number 2, the majority of respondents (60.2 %) did not reveal any knowledge about the tsunami that reached the Portuguese coast. Concerning the last question, the bulk of the respondents considered it fundamental to include topics related to tsunami mitigation and prevention in science curricula. Although the majority recognized the need to know about these issues, their answers revealed a lack of knowledge regarding tsunamis, especially those related to tsunamis that occurred in the past. In general terms, it seems that gender does not influence the answers. On the other hand, the age of the respondents seems to influence some results.