



Metaxa Mine (Santorini, Greece), a unique geosite presented via interactive Story Maps approach

Varvara Antoniou (1), Paraskevi Nomikou (1), Pavlina Bardouli (1), Pantelia Sorotou (1), Fabio Luca Bonali (2), Lemonia Ragia (3), and Andreas Metaxas (1)

(1) National and Kapodistrian University of Athens, Geology and Geoenvironment, Panepistimioupoli Zografou, 15784 Athens, Greece, (2) Department of Earth and Environmental Sciences, University of Milano-Bicocca, Piazza della Scienza 4 – Ed. U04, 20126 Milan, Italy, (3) Natural hazards, tsunami and coastal engineering Laboratory, Technical University of Crete, Chania, Greece

Recent improvements in digital Geographic Information Systems (GIS) technologies provide new opportunities for immersive and wide engaging public audiences with complex multivariate scientific datasets. Such improvements result in the “Story Maps” tool that is nowadays used for science and spatial data communication, information and dissemination; it consists of a robust and versatile set of tools for visualizing spatial data where it is possible to combine multi-media assets (e.g. photos, videos, 3D representations) and narrative text, providing an excellent support for scientific storytelling in a compelling and straightforward way.

In this work we present a tailored web-based application (<https://goo.gl/scE4fg>), based on story mapping technology, where the historical and volcanological importance of Metaxa Mine (Santorini volcanic complex), which is also known as Mavormatis mine is highlighted and valued. Being characterized by the presence of several key outcrops where the pumice layers of the Late Bronze Age (LBA) (Minoan) Eruption are very well exposed, this site should be recognized as an important geoheritage of Santorini island and thus should be protected.

Our story map is based on webmaps enriched with the integration of different data like images, thematic maps, narrative texts and multimedia that help the end user to engage in scientific knowledge of the LBA eruption and the history of the mine. 3D relevant views from the models are also presented; the 3D reconstruction of the western part of the mine has a very high detail (pixel size of 8 mm) thanks to the use of Aerial Structure from Motion technique, providing also the possibility to better defining the different volcanic layers even in inaccessible outcrops like vertical cliffs or landslides.

Adopting Story Maps for this work, offers a number of advantages as compared to traditional methods: i) friendly mapping; ii) the ease of use and understanding of the provided information; iii) the increased interactivity comparing to analogue or simple web maps; iv) the customized display based on the user’s needs; v) the ability to import different kind of media (images and videos); vi) the ability to add explanatory text covering a wide range of heterogeneous information.

Metaxa Mine Story Map portrays a good example of an application providing a full presentation of a possible geotope, while the available information reaches a wide audience, developing the interest and possibly motivating the public to learn more (or even to visit) about the display area. At a general level, Story Maps can be an ideal way for presenting the geological, geomorphological and historical contents of other places, especially places that are characterized as geotopes or Natura areas.