Using a UAV for collecting information about a deep-seated landslide in the island of Lefkada following the 17 November 2015 strike-slip earthquake (M=6.5)

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Documentation of landslides is a very critical issue because effective protection and mitigation measures can be designed only if they are based on the accuracy of the provided information. Such a documentation aims at a detailed description of the basic geomorphological features e.g. edge, traces, scarp etc. while variables such as the landslide area and the volume of the area (that moved) are also measured.

However, it is well known that the mapping of these features is not always feasible due to several adverse factors e.g. vertical slopes, high risk. In order to overcome this issue, remote sensing techniques were applied during the last decades. In particular, Interferometric Synthetic Aperture Radar (InSAR), Light Detection and Ranging (LiDAR) and photogrammetric surveys are used for geomorphic mapping in order to quantify landslide processes. The latter one, photogrammetric survey, is frequently conducted by use of Unmanned Aerial Vehicles (UAV), such as multicopters that are flexible in operating conditions and can be equipped with webcams, digital cameras and other sensors. In addition, UAV is considered as a low-cost imaging technique that offers a very high spatial-temporal resolution and flexibility in data acquisition programming.

The goal of this study is to provide quantitative data regarding a deep-seated landslide triggered by the 17 November 2015, Greece earthquake (M=6.5; Ganas et al., 2016) in a coastal area of Lefkada, that was not accessible by foot and accordingly, a UAV was used in order to collect the essential information.

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