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Landslide Phenomena in Kimi area, Euboea Island, Central Greece

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The present study was carried out in order to investigate the causes and triggering factors of serious catastrophic slope failures that have been manifested in the area of the municipality of Kimi, which is located in Euboea Island, Greece. In this area, extended landslide phenomena were observed in several sites, mainly due to the physical conditions of the existed formations and their overall geotechnical behavior. In most cases, these phenomena were also related to human interventions. A detailed examination of the affected area along with the interpretation of aerial photographs revealed that the types of the landslides occurred in Kimi area are classified in creeps, rotational landslides, lateral spreads, rockfalls as well as earthflows. The collected data processing showed that the slides mainly took place at the upper horizons of the Neogene marls and flysh formations, which was attributed to their intensive geomechanical heterogeneity. Moreover, a great number of rock falls and rock avalanches were observed along Kimi – Metoxi urban road. Specifically, at Vitala village the catastrophic landslide phenomena resulted in the collapsing of several structures, putting the locals at risk. Therefore, proper remedial measures were proposed in each case of failure. Furthermore, all the data were plotted into a 1:20.000 scale geotechnical map which was followed by a series of relative thematic maps, constructed with the use of an appropriate Geographic Information System. By using the produced maps as well as the statistical analysis of the collected data, the identification of new possible hazardous sites was accomplished. This, along with the proposed remedial measures, will be a

useful tool to local Authorities either for the protection of these sites from landslide manifestations during the construction of various technical works or for a proper confrontation of them.