



## **Slope stability and vegetation cover ecological efficiency**

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The objective of the study has been to underline as the ecological efficiency of the different types of vegetation can influence the stability of the slopes. The ecological efficiency tightly results tied up to: the typology of vegetation, its distribution and the extension of the stains, the coverage and the mixture, the age, the evolution, the regenerative ability and the presence of factors of trouble, that in the basin in matter they are mainly represented by the repeated passage of the fire. The study area, near the village of Cetara, is situated in the southern part of the Sorrento - Amalfi peninsula at the end of the small catchment basin of the Cetus stream (3.8 km<sup>2</sup>). The mountain reliefs are essentially composed of carbonate rocks covered by the volcanoclastic deposits of the Vesuvius eruption in 79 A.D, and are characterised by steep slopes. The area have been analysed through interpretation of the ortophotos and field reliefs performed through collecting of sample of plants and test areas to having information on the trees and shrubs. Through these studies necessary information are been gotten for making some temathic maps of the area of Cetus basin stream using a software GIS. The maps are the followings: Soil use (6 classes: deciduos wood, degraded wood, grassland and bushes pastures, cultivated field areas, urban areas, rocky surfaces), Vegetation typology (12 classes, gathered in four categories: vegetation of the cultivated terraces in the agricultural areas, vegetation of the rocky surfaces, open grassy and shrubby formations, degraded woods, forest), Fire distribution (fire extension in the different typologies and age of the stricken vegetation, the type of answer to the fire), Vegetation age (3 classes), Biomass (3 classes, ton/hectare). The ecological efficiency has been represented through a derivated map named Stability of the vegetation, intending as ecological efficiency the ability of an ecosystem to take back the really state of equilibrium when this has gone lost subsequently to actions of trouble or, in the case of permanent trouble, to reach a new proper equilibrium for the new situation. Finally the relationship between the ecological efficiency of the vegetation

cover and the landslide susceptibility has been evaluated in the Cetus stream basin, using as input data the distribution of landslides occurred in 1910.