



## **Human impact on the environment and its effects on the development of natural hazard and risk in Madeira island (Portugal)**

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The human impact on the territory and on the natural system of Madeira island (Portugal), even if it has been particularly active recently only, is going to influence evidently environmental and geomorphological processes of the island. The development of human activity and its increasing occupation of the territory, mainly in the south-east part of the island, dominantly along the coastal areas, seem to be strictly related with the development and the spreading of natural hazards phenomena. The study of historical data about natural hazards events occurred in Madeira, (in particular way the analysis of landslides and flooding), of geological and topographic features and of climatic data, has been integrated with field and drainage network observations.

Comparative analyses of the all data highlights the improving of frequency of natural hazards events and the positive territorial relationship between human activity and landscape modification, land-use changing, high drainage density and the development of natural hazards phenomena. The study carried out in this paper shows that the increase and the spreading of natural hazards and risk in Madeira island are highly related to human activity and to the environmental modifications.