

Vulnerability mapping for sustainable hazard mitigation in the city of Bukavu, South Kivu, DR Congo

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This study presents the natural as well as human factors which are responsible for the environmental degradation and the increasing vulnerability of the population of Bukavu to natural hazards. The city of Bukavu is located within the Albertine rift, a region which is prone to seismic activity. Moreover, the accentuated topography, the lithology and climate regime contribute considerably to the occurrence of both geomorphologic and hydroclimatic hazards. Over the last few decades the city has evolved at an exponential pace, without appropriate urban planning. Between 1970 and 2008 the population increased more than four times within a constant area of about 60 km². The related change in land use has drastically amplified both the frequency and impact of natural hazards in the city. The zones at high risk of mass movements and flooding have been identified and mapped using remote sensing and Geographical Information System (GIS). The changes in land use and population density were also studied, and we propose several approaches to raise the resilience of the population in order to reduce the impact of natural hazards on the city.