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## Spatial planning and flood risk: The case of the Buna River, Shkoder, Albania

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In the last years, Albania underwent a rapid development, which resulted in an uncontrolled building boom and general land degradation. For these reasons, an ever-greater portion of the Albanian population is exposed to natural risks, whose major threats are represented by floods and earthquakes. Spatial planning and hydraulic risk management are a worldwide necessity which is best achieved when natural and artificial elements located closely to watercourses are known in detail. A geodatabase is a practical tool to store and manage such information. Land use and land cover changes have negative consequences on watershed management in Buna River Basin. They increase impervious ground surfaces, decrease infiltration rate and increase runoff rate, hence causing flood during the dry seasons. This study was undertaken to achieve the natural and artificial elements connected to hydraulic risk and fluvial dynamics in Buna River. Through a GIS overlay and GPS measurements where mapped elements include buildings, hydraulic works, weirs, drainage outlets, riverbanks, structural damages, fluvial bars and eroding banks. Consequently, a GIS geo database was built to visualize the spatial distribution of the mapped elements and to store a series of technical data, including the present preservation condition for man-made objects. GPS data was integrated in GIS to examine the extent of land use and cover change in the sub catchment of Buna River. Both quantitative and qualitative data were used for this study. The geo database provides an overview of the territories connected with the fluvial dynamics, highlighting that in the studied territory; the more is urbanized, the more it is exposed to hydraulic risk.

**Key word;** spatial planning, natural hazards, relief drill, Buna river, Shkoder.