

THE IMPORTANCE OF CATCHMENT CHARACTERISTICS IN TERMS OF INTENSIVE EROSION RUNOFF FORMATION THREAT LEVEL

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We located almost 130 000 critical localities near to urban areas where eroded material can enter the urban area. These localities were divided into five threat categories. Detailed modelling by WaTEM/SEDEM provided an extensive database of almost 130 000 micro catchments with outlet profiles threatened by intensive erosion runoff, and classified by five categories of threat for infrastructure damages. The dataset provided data for further analysis. The questions were: What are typical characteristics of a catchment that produces a dangerous amount of eroded material? Which catchment parameters are crucial for the production and transport of sediment by surface runoff? Is it possible to identify a reliable risk point and an appropriate drainage area (catchment) using simple methods based on widely available parameters? Our analysis, which focuses on evaluating selected factors in terms of their impact on the intensive erosion runoff threat rate, considers 11 characteristics describing land use, morphological, morphometric, soil, and precipitation characteristics. The results show that a typical watershed producing a dangerous amount of eroded material is a large convergent area with a steep slope close to the outlet, and with low proportion of grassland. The soil erodibility and the frequency of intensive rainfall events are also important factors.