



Sediment Budget Modeling in Mountain Areas: Usability of available Soil Data

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In the last decades the investigations of sediment budgets for fluvial basins have shown remarkable results in agriculturally used lowland catchments. However, long term sediment budgets for mainly forested mountainous areas with a relief gradient of more than 500 m have so far not been attempted. These mountain ranges differ clearly from the intensively and continuously used agricultural lowlands in terms of land use history and intensity since the colonisation and cultivation of such areas are erratic in time and space. Due to the steeper slopes the dynamic of re-sedimentation, preservation and relocation of eroded material is certainly different from lowland areas.

Modeling sediment budgets for mesoscale fluvial basins has to be based on the available soil data from the geological soil surveys. Surface area and soil truncation depth can be extracted from aggregated soil units and the geological soil database. For interpretation of the soil database a soilscape model for the mountain soils is needed. In the study area periglacial slope deposits of initially nearly constant thickness form the soil parent material, which can be utilized to calculate soil loss on a lithogenetic basis.

Preliminary budget estimates show a range of difficulties concerning a proper interpretation of the soil survey data, which result in budget values that vary by fifty percent. First results from field work point to further shortcomings in the representation of lithogenetic and colluvial units in the soil survey data. Therefore additional field work is conducted to evaluate mesoscale erosion and sedimentation in the study area. Using both OSL and ¹⁴C to date sedimentation phases aim to resolve distinct events and to relate to land use history.