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Soil surface lowering due to soil erosion in villages near Lake Victoria, Uganda

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In the effort to pinpoint the sources of sediment pollution in Lake Victoria, the contribution of sedi-ment from compounds, landing sites, main roads and footpaths is determined in the catchment of Na-bera Bay and Kafunda Bay at the northern shore of Lake Victoria in southern Uganda. The amount of soil loss in compounds and landing sites is determined by the reconstruction of the original and current soil surface according to botanical and man-made datable objects. The soil erosion rate is then deter-mined by dividing the eroded soil volume (corrected for compaction) by the age of the oldest datable object. In the study area, the average soil erosion rate in compounds amounts to 107 Mg ha-1 year-1 (per unit compound) and in landing sites to 207 Mg ha-1 year-1 (per unit landing site). Although com-pounds and landing sites occupy a small area of the study area (1.1 %), they are a major source of sediment to Lake Victoria (63 %). The soil loss on footpaths and main roads is calculated by multip-lying the total length of footpaths and main roads with the average width and depth (measured towards a reference surface). After the correction for compaction is carried out, the soil erosion rate on foot-paths amounts to 34 Mg ha-1 year-1 and on main roads to 35 Mg ha-1 year-1. Also footpaths and main roads occupy a small area of the study area (1.1 %), but contribute disproportionately to the total soil loss in the catchment (22 %). In this research, the information about the village/compound given by the villager/owner is indispensable. In accordance to an adaptation of the model of McHugh et al. (2002), 32 % of the sediment that is generated in the catchment, is deposited in Lake Victoria (i.e. 2 209 Mg year-1 or 0.7 Mg ha-1 year-1). The main buffer in the study area is papyrus at the shore of Lake Victoria. Also sugarcane can be a major buffer. However, the sugarcane-area is intersected by com-pounds, landing sites, footpaths and main roads that generate large amounts of sediment and function as main bypass mechanisms (high CR) facilitating and enhancing sediment delivery to Lake Victoria.