



A preliminary catchment sediment budget for the river Dijle

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Soil erosion and sediment deposition have been important geomorphic processes in the central Belgian Loess Belt for more than 2000 years. A sediment budget approach is a powerful tool to understand the geomorphic response to changing human impact at various scales. So far, such research has mainly focused on relatively small catchments (max 52 km²). This study focuses on the Holocene sediment budget for the 820 km² large Dijle catchment in the Belgian loess-belt.

Alluvial sediment storage in the main valley was characterized and quantified using soil augerings along various transects. AMS 14C dating of peat and plant remains is combined with existing palynological data to get a better insight in the temporal framework. The thickness of the upper Holocene layer of floodplain fines in the main Dijle valley is on average 4 meter, resting on about 1.5 meter of early Holocene organic sediments (black floodplain fines). The structure of the lower part of the valley fill is complicated by layers of older sediments, positioned at the same depth as these recent layers. Quantification of sediment storage for in the tributary valleys is mainly based on existing data. Preliminary results show a large variation of sediment thickness in these valleys, varying between 1 and 4 meter for the upper layer.

Soil erosion and sediment deposition on the hillslopes were calculated for different morphological classes using an existing dataset containing erosion and deposition estimates based on soil-horizon depths (Rommens et al. 2005).

The resulting preliminary sediment budget provides an overall picture of the erosion and sedimentation evolution of the catchment and allows already to identify some important time lags between hillslope and basin response. Future research will focus on a better understanding of the complexity of the alluvial deposits and on establishing

a time-frame-model for the transport of sediment through the catchment.