Soil redistribution in rural catchment: How fifty years old soil survey can help model improvement

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In 1947, a comprehensive systematic survey of the Belgian soil cover was initiated. Field observations were done every 75 meters by soil auger to a standard depth of 125cm (if possible). Map units were delineated on cadastral field maps at scale 1:5000 (Fig. 2).

More recently, the Walloon part of this map was digitized to produce the Digital Soil Map of Wallonia (DSMW) (PONS, 2004). Since 2010, new soil observations are carried out on different sites of the studied region, in order to:

- give spatially distributed information about erosion and deposition.
- estimate rates of erosion by comparison with historical information.

The observations are made by auger according to a catena logic and taking into account the existing limits of the map. These new observations are valuable for better understanding, localization and quantification of net erosion, just like for the old soil descriptions (PCNSW, 2004).

A 10m resolution DSM (Fig 4.3) was built up in 2009 using the best available data. Its RUSLE is 0.5m on the RUSLE factors (Fig. 4.2) and rainfall intensity (Fig. 4.1) maps were derived at the same resolution (Demarclin et al., 2010). A land use map exists at 1:10,000 scale since 2005 and is regularly updated.

The comparison between new and old surveys as well as the catena analysis through the landscape allows us to progress towards a calibration of the deposition model on a decadal basis.