



Landscape - Soilscape Modelling: Proposed framework for a model comparison benchmarking exercise, who wants to join?

Jeroen M. Schoorl (1), Victor G. Jetten (2), Thomas J. Coulthard (3), Greg R. Hancock (4), Chris S. Renschler (5), Brian J. Irvine (6), Olivier Cerdan (7), Mike J. Kirkby (6), and Tom (A) Veldkamp (2)

(1) Soil Geography and Landscape group, Wageningen University, Wageningen, The Netherlands (jeroen.schoorl@wur.nl), (2) Faculty of Geo-Information Science and Earth Observation (ITC), University of Twente, The Netherlands, (3) Department of Geography, Environment and Earth Science, University of Hull, Hull, UK, (4) School of Environmental and Life Sciences, University of Newcastle, Callaghan, New South Wales, Australia, (5) Department of Geography, University at Buffalo, The State University of New York, Buffalo, New York, (6) School of Geography, University of Leeds, Leeds, West Yorkshire, UK, (7) BRGM, ISTO, UMR 7327, BP 36009, 45060 Orléans, France

Current landscape – soilscape modelling frameworks are developed under a wide range of spatial and temporal resolutions and extents, from the so called event-based models, soil erosion models to the landscape evolution models. In addition, these models are based on different assumptions, include variable and different processes descriptions and produce different outcomes. Consequently, the models often need specific input data and their development and calibration is best linked to a specific area and local conditions. Model validation is often limited and restricted to the shorter time scales and single events.

A first workshop on catchment based modelling (6 event based models were challenged then) was organised in the late 90's and the results lead to some excellent discussions on predictive modelling, equifinality and a special issue in *Catena*. It is time for a similar exercise: new models have been made, older models have been updated, and judging from literature there is a lot more experience in calibration/validation and reflections on processes observed in the field and how these should be simulated. In addition there are new data sources, such as high resolution remote sensing (including DEMs), new pattern analysis, comparison techniques and continuous developments and results in dating sediment archives and erosion rates.

The main goal of this renewed exercise will be to come up with a benchmarking methodology for comparing and judging model behaviour including the issues of upscaling and downscaling of results. Model comparison may lead to the development of new research questions and lead to a firmer understanding of different models performance under different circumstances.