



Makerere University College of Agricultural
and Environmental Sciences



Short course

Soil Erosion Risk Modelling with R

21. / 22. February 2019

The aim of this course is to introduce the participants into environmental modelling of spatial data using the open source software R. The workshop will cover a basic introduction in R and RStudio and a brief introduction in working with spatial data in R. A practical example gives the participants the chance to apply the learned techniques. We will perform a simple soil erosion study implementing the Revised Universal Soil Loss Equation (RUSLE). Employing uncertainty analysis, the participants will learn how to interpret results and how to make informed decisions based on uncertain results. The workshop is intended to be hands on! Therefore, we expect that the participants of the workshop bring their own notebooks to follow the course. Data and Software will be provided during the workshop.





Preliminary schedule:

Day 1 (09:00 - 17:30)

- Opening
- Software and Data installation, Introduction to R
- Introduction to Spatial Data in R & Soil Erosion Risk Modelling using the RUSLE, including potential data sources

Day 2 (09:00 - 17:30)

- Application of RUSLE for a specific Case study (e.g. Sio-Malaba-Malakisi River Basin)
- Range of possible input layers & uncertainty assessment
- Influence of possible management practices on Soil erosion risk
- Calculation of Soil Loss for catchments / administrative boundaries (and comparison with observed data)
- Wrap-Up & Closing



This short course is conducted in the framework of the academic partnership project “Capacity building on the water-energy-food security Nexus through research and training in Kenya and Uganda” (CapNex). The aim of this project is to strengthen the capacities of young researchers from Kenyan, Ugandan and Austrian Universities to cope with challenges associated to water quality and quantity, energy provision and food security in East Africa. The project is funded by the Austrian government through the APPEAR programme of the Austrian Development Cooperation. Project partners are TU Wien, Makerere University, TU Kenya, and BOKU.