USING SOIL PHYSICAL DATA AND MODELLING TO ASSESS SOIL QUALITY AND WATER USE IN AGRICULTURE UNDER CLIMATE CHANGE SCENARIOS

Quirijn de Jong van Lier
Universidade de São Paulo, Brazil

Soils have a key-role in providing ecosystem services related to water and air-quality and surface energy balance. Specific models allow the interpretation of soil physical characteristics in terms of system properties. The family of agro-hydrological models allows to predict the effect of changes in boundary conditions like agricultural management or climate change on system outputs e.g. agricultural yield, water footprint, groundwater recharge, groundwater pollution and others. It can also be used to improve the use of natural resources in agricultural or ecological management. Applied examples linked to agro-hydrological modelling will be given with reference to agricultural management in the southeast of Brazil and to the water-limited caatinga ecosystem in Brazil's northeast.