Challenges in Observation, Classification and Mapping of Soils

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In the past decade, scientists and the human society understood the important role and functions of soils in local and global environmental processes and problems as well. The pressure of securing enough quantity of food in the desired quality also highlighted the precious value of soils. The hunger for high quality, high resolution, continuously updated and internationally comparable soil data has been experienced in several science disciplines, in environmental and agricultural policy making and related management, in modelling and many other areas. At the same time, there was a big boom in the development in observation techniques and technologies from microscopes to satellites, and in the processing methods and technologies of the giant amount of data. The paper will discuss the major challenges in observation, classification and mapping of soils including the great range of kind and the variation of the availability of resources, the great differences in capacities of interpretation, and the problems with standardization of measurements and evaluation methods, as well as validation of results.

Keywords: Soil observation; classification; mapping