

Book of Abstracts

Wageningen Soil Conference 2015

'Soil Science in a Changing World'

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NEW GRIDDED DATA SETS FOR GLOBAL SUSTAINABILITY STUDIES – WISE30SEC AND SOILGRIDS

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ISRIC – World Soil Information (WDC-Soils), The Netherlands

There is a growing demand for quality-assessed soil information in support of studies of environmental, societal and economic sustainability. Nonetheless, soil remains one of the least well described data in global land models and uncertainties remain large. To address this gap, with (inter)national partners, ISRIC is developing a range of derived soil products that take into consideration differences in user needs. This work is underpinned by a growing selection of quality-assessed, geo-referenced soil profiles that are managed in ISRIC's centralised database (WoSIS); both conventional and digital soil mapping approaches are being developed. The former consider the soil-geographical delineations of the Harmonised World Soil Database (HWSD) and taxotransfer procedures that draw on statistical analyses of harmonised soil profiles held in WoSIS. Unlike the HWSD, the forthcoming WISE30sec^a product will include estimates of the uncertainty in the predictions (mean \pm std) for 7 layers up to 2m depth. Complementary to these efforts, major progress has been made with the development and implementation of the Global Soil Information Facilities (GSIF), a framework for collaborative digital soil mapping. The initial global product (SoilGrids1km)^b drew on analytical data for ~110,000 soil profiles and ~75 covariate layers representing soil-forming factors; global regression models were used to predict property estimates (mean and 90%-interval) to 2m depth. Subsequently, for Africa, predictions have been generated with significantly higher accuracy and spatial detail (SoilGrids250m)^c. As GSIF serves as a framework for collating/harmonising soil data it allows for regular updates of world soil information, at user-defined resolutions (from 250m to 50km), using increasingly large data sets and evolving models. The international community can help to **improve the methodologies and products by submitting validation reports, sharing additional geo-referenced soil profile and covariate data and by expanding the present range of models, thus sharing ownership.**

^a <http://www.isric.org/projects/world-inventory-soil-emission-potentials-wise>

^b <http://www.isric.org/content/soilgrids>

^c <http://www.isric.org/content/next-generation-soil-information-system-africa-250-m-resolution-published>