SoilInfo App: global soil information on your palm

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ISRIC — World Soil Information has released in 2014 and app for mobile de- vices called "SoilInfo" (http://soilinfo-app.org) and which aims at providing free access to the global soil data. SoilInfo App (available for Android v.4.0 Ice Cream Sandwhich or higher, and Apple v.6.x and v.7.x iOS) currently serves the Soil- Grids1km data — a stack of soil property and class maps at six standard depths at a resolution of 1 km (30 arc second) predicted using automated geostatistical mapping and global soil data models. The list of served soil data includes: soil organic carbon (‰), soil pH, sand, silt and clay fractions (%), bulk density (kg/m3), cation exchange capacity of the fine earth fraction (cmol+/kg), coarse fragments (%), World Reference Base soil groups, and USDA Soil Taxonomy suborders (DOI: 10.1371/journal.pone.0105992). New soil properties and classes will be continuously added to the system. SoilGrids1km are available for download under a Creative Commons non-commercial license via http://soilgrids.org. They are also accessible via a Representational State Transfer API (http://rest.soilgrids.org) service. SoilInfo App mimics common weather apps, but is also largely inspired by the crowdsourcing systems such as the OpenStreetMap, Geo-wiki and similar. Two development aspects of the SoilInfo App and SoilGrids are constantly being worked on:

- Data quality in terms of accuracy of spatial predictions and derived information, and

- Data usability in terms of ease of access and ease of use (i.e. flexibility of the cyberinfrastructure / functionalities such as the REST SoilGrids API, SoilInfo App etc).

The development focus in 2015 is on improving the thematic and spatial accuracy of SoilGrids predictions, primarily by using finer resolution covariates (250 m) and machine learning algorithms (such as random forests) to improve spatial predictions.