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A geospatial soil-based DSS to reconcile landscape management and land protection

Piero Manna (1), Angelo Basile (1,6), Antonello Bonfante (1), Amedeo D'Antonio (2), Carlo De Michele (3), Michela Iamarino (4), Giuliano Langella (1), Antonio Florindo Mileti (4), Paolo Pileri (5), Simona Vingiani (4,6), Fabio Terribile (4,6)

(1) Institute for Mediterranean Agricultural and Forestry Systems, National Research Council, Ercolano, Napoli, Italy (angelo.basile@cnr.it), (2) Campania Region, Agriculture Department, Naples, Italy (amedeo.dantonio@regione.campania.it), (3) Ariespace s.r.l., Naples, Italy (demichele.carlo@gmail.com), (4) Department of Agriculture, University of Naples Federico II, Portici (Naples), Italy, (5) Politecnico di Milano, Department of Architecture and Urban Studies, Milano, Italy (paolo.pileri@polimi.it), (6) CRISP, Interdepartmental Research Center of Earth Critical Zone, Portici (Naples), Italy (fabio.terribile@unina.it)

The implementation of UN Agenda 2030 may represent a great opportunity to place soil science at the hearth of many Sustainable Development Goals (e.g. SDGs 2, 3, 13, 15, 15.3, 16.7). On the other side the high complexity embedded in the factual implementation of SDG and many others ambitious objectives (e.g. FAO goals) may cause new frustrations if these policy documents will not bring real progresses. The scientific communities are asked to contribute to disentangle this complexity and possibly identifying a "way to go". This may help the large number of European directives (e.g. WFD, EIA), regulations and communications aiming to achieve a better environment but still facing large difficulties in their full implementation (e.g. COM2015/120; COM2013/683). This contribution has the motivation to provide a different perspective, thinking that the full implementation of SDGs and integrated land policies requires to challenge some key overlooked issues including full competence (and managing capability) about the landscape variability, its multi-functionalities (e.g. agriculture / environment) and its dynamic nature (many processes, including crops growth and fate of pollutants, are dynamic); moreover, it requires to support actions at a very detailed local scale since many processes and problems are site specific.
The landscape and all the above issues have the soil as pulsing heart. Accordingly, we aim to demonstrate the multiple benefits in using a smart geoSpatial Decision Support System (S-DSS) grounded on soil modelling, called SOILCONSWEB (EU LIFE+ project and its extensions). It is a freely-accessible web platform based on a Geospatial Cyber-Infrastructure (GCI) and developed in Valle Telesina (South Italy) over an area of 20,000 ha. It supports a multilevel decision-making in agriculture and environment including the interaction with other land uses (such as landscape and urban planning) and thus it simultaneously delivers to SDGs 2, 3, 13, 15, 15.3, 16.7.