

## Some extra information

### *Why do we need a new frontier in soil/landscape management?*

Scientific disciplines applied to agriculture and forestry often claim to provide proper technical answers about best and sustainable landscape and soil management.

In reality, results have not always produced significant impact partly because a lack of viable tools. This is not acceptable considering both (i) society demand of reconciling agriculture and forestry production with sustainable management of natural resources (e.g. Horizon 2020) and (ii) increasing soil and landscape degradation processes.

A different approach is necessary if the sustainable management of our forest and agriculture landscapes is to be achieved. We believe that such management requires to develop a truly integrated and interdisciplinary system including soil-plant-atmosphere interaction. Such interdisciplinary knowledge system must incorporate (i) soil and landscape multi-functionality, (ii) climate change scenarios, (iii) multiusers and multiscale approaches also enabling (iv) "bottom-up" contributions to landscape governance.

In this scenario recent developments in Spatial Decision Support Systems (S-DSS) freely managed through the Web offer a great opportunity in order to provide integrated, consistent and operational tools to support individuals, private companies and public bodies in their everyday management of the soil and rural landscape.

We believe that this entire approach requires that research in many domains of agriculture and environmental sciences take onboard these opportunities developing, testing and providing specific contributions to the many complex problems of European landscapes.

### *A new approach to complex problems*

At the meeting we shall explain that standard web-GIS tools are simply not enough to address landscape management and planning complexity, **while our system - based on Geospatial Cyberinfrastructure - can do it!**

## About us

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Giannecchini S., et al., from GeoSolutions S.A.S.*

*Other 25 scientists participating to the project from many different disciplines and working between University of Napoli and CNR ISAFoM*



**SoilConsWeb**  
LIFE+

## ***A new frontier in landscape management: real time assessing of land trade-offs (and more)***

***Bruxelles, Avenue de Beaulieu 5, BU-5, Room 0/B  
Wednesday 26 February 2014, 13:15 - 14:30***

**13:15 - 13:20** - L. Marmo - DG ENV.B.1

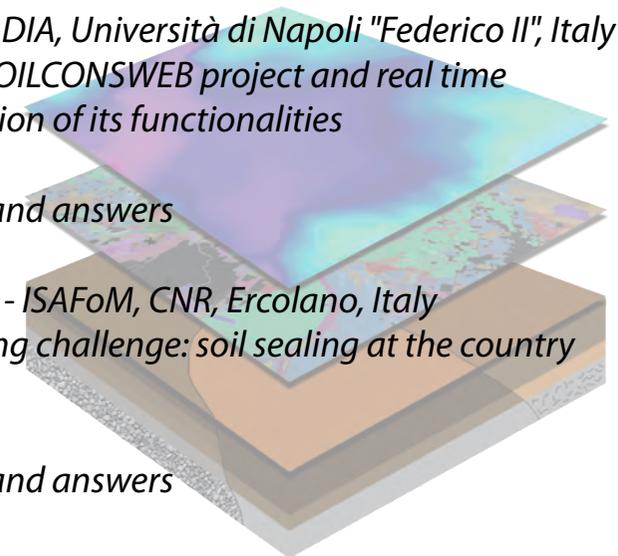
*Welcome and introduction*

**13:20 - 13:50** - F. Terribile - DIA, Università di Napoli "Federico II", Italy  
*The LIFE+ SOILCONSWEB project and real time demonstration of its functionalities*

**13:50 - 14:05** - Questions and answers

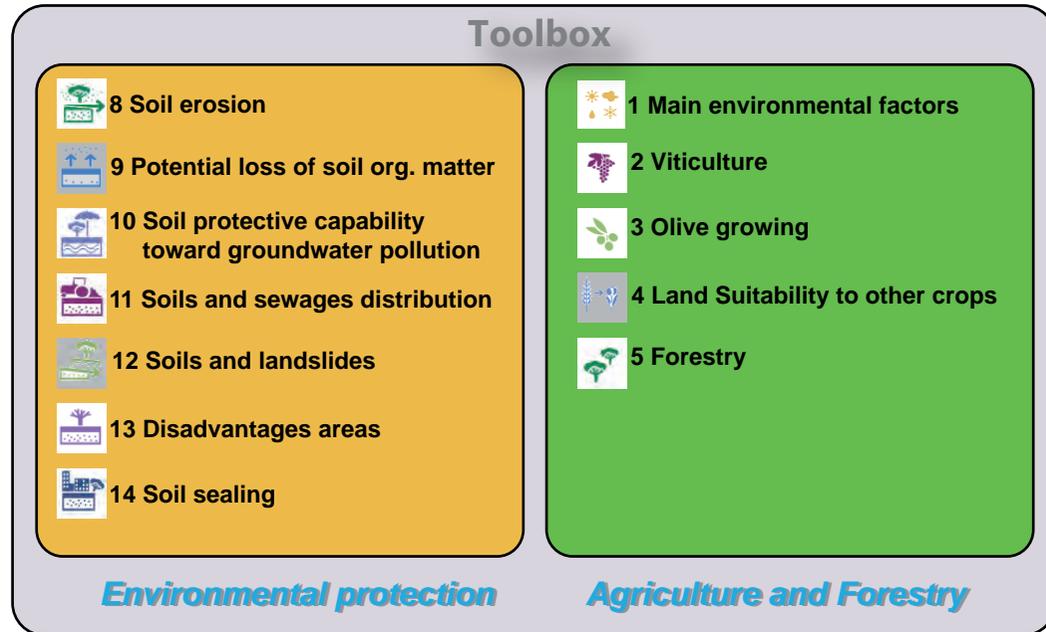
**14:05 - 14:20** - G. Langella - ISAFoM, CNR, Ercolano, Italy  
*The upscaling challenge: soil sealing at the country scale (Italy)*

**14:20 - 14:30** - Questions and answers



**SOILCONSWEB**, a project financed by LIFE+, is developing, testing and implementing a tool to support the decisions of stakeholders on soil and landscape issues. The tool, including many innovative scientific and technical features, is designed to enable the introduction of the best soil conservation and land management measures, facilitating the implementation of environment-related EU directives and regulations, as well as national land planning decisions.

**The system, strongly based on the multifunctionality of soils and landscapes, incorporate the following tools:**



**Each tool can provide many answers. Follows some examples:**

- ✓ How much water is adsorbed today by a given soil with a certain land cover?
- ✓ What would happen on water balance terms if the land cover would be changed?
- ✓ What are the forest types, height of stands, growing stock, above ground carbon stock on my specific site?
- ✓ What is the filtering capability of my different soils towards groundwater pollution?
- ✓ Accountability of ecosystem services lost in case of any specific land take
- ✓ Effects of climate-change on soil functions of a certain landscape
- ✓ What is it the evolution of grape quality during vine growth in my farm?
- ✓ Interactive soil sealing evaluation



**The tool has been developed through a "cyberinfrastructure" platform** that supports the acquisition of advanced and also dynamic data (e.g. pedological, daily climatic, land use) and their storage, management and integration, data mining, data visualization and computer applications "on the fly". This will allow individuals, planners, communities or administrators to run real time

simulation modelling for they own needs, all freely available via Internet with just few clicks.

**The tool is fully tested over a case study of 20,000 ha** (Telesina Valley; Benevento, Italy) and for specific applications at Etna (viticulture) and Lodi plain (soil sealing).

The potential upscaling to larger area will also be displayed using as a case study the analysis of **soil sealing and its evolution at country level (Italy)**. This upscaling will be demonstrated by reconciling the apparent conflicting issues of "real time processing of high resolution data" against "very large spatial extent". The tool that will be shown at country level will deal with real time processing and evaluation of (i) land use change over time, (ii) soil sealing evolution, (iii) processing and analysis of soil sealing indicators at different time steps.

**Keywords**

