



Soils4EU workshops on
“Impact of soil degradation on human health”
“Potential of Earth Observation for improved soil monitoring”



Barcelona, 2 September 2019

SOILS4EU is a 3-year project that provides support to DG Environment of the European Commission for the implementation of the EU Soil Thematic Strategy. The project is coordinated by Deltares (the Netherlands), with four partners from Germany (Helmholtz Centre for Environmental Research Germany – UFZ), Poland (Institute of Soil Science and Plant Cultivation – IUNG) and Spain (Mediterranean Agronomic Institute of Zaragoza – IAMZ CIHEAM, and the Spanish National Research Council-Estación Experimental de Aula Dei – CSIC-EEAD).

As side events of the [TERRAenVISION 2019 conference](#), **SOILS4EU is organizing on 2 September 2019 in the afternoon (14h30-18h00), two simultaneous workshops** to discuss subjects that DG Environment considers of great importance:

- ***Workshop 1: Impact of soil degradation on human health***
- ***Workshop 2: Potential of Earth Observation for improved soil monitoring***

SOILS4EU has drafted two dedicated in-depth reports that will be presented and discussed during the workshops. The aim is not only to disseminate the findings but to gather expert opinions and feedback on the conclusions and recommendations of the reports. The workshops results will feed the reports and serve as deliverables of the project.

Prior to the workshop, the registered participants will receive draft copies of the report and a set of key questions to be discussed during the workshop sessions. Each workshop will be organized into a plenary presentation of the report, a working groups session for in depth discussion around a set of key questions, and a plenary session to get the feed-back of the working groups, discussion on key messages and recommendations and final conclusions. After the closure of the workshops, the participants are invited for a cocktail.

The workshops will run in parallel from 14h30 to 18h00. Experts interested to participate in a workshop are kindly invited to confirm the workshop of their choice by **registering through the [TERRAenVISION registration system](#)**. Participation to the Soils4EU workshops is free of charge.

Venue: [Faculty of Geography and History, University of Barcelona, St. Montalegre 6, 08001 Barcelona](#)

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OVERVIEW OF THE WORKSHOPS

Workshop 1: Impact of soil degradation on human health

Facilitators: Agnieszka Klimkowicz-Pawlas, Grzegorz Siebielec (IUNG, Poland), Linda Maring (Deltares, The Netherlands)

The WHO estimates that approximately a quarter of the diseases that affect humans today occur as a result of prolonged exposure to environmental pollution. The SOILS4EU Report is paying particular attention to the relations between soil pollutants and human health. Several case studies that show the linkage between epidemiologic and environmental data will be presented. The report also provides an overview of how other types of soil degradation such as soil sealing, erosion or loss of biodiversity can affect human health. There are still many gaps, such as the link between epidemiological data and health or the impact of emerging pollutants, since such knowledge has not been sufficiently explored and integrated.

The draft content of the report will be presented and discussed during the workshop. Case study examples, data sources, assessment tools and major soil degradation-induced impacts will be shared and discussed with the workshop participants. Recommendations for measures limiting the risk, gaps in data availability and methods to assess better the impact of soil degradation on human health will be formulated in order to update the report.

Draft agenda

Time	Session
14.30	Welcome and introduction to the programme
14.40 – 15.10	Presentation of the SOILS4EU report on “Impact of soil degradation on human health” (IUNG)
15.10 – 15.40	Plenary discussion and feedback on the report: <ul style="list-style-type: none">• Do you know examples of epidemiological case studies on links between soil degradation and human health?• What is the most dangerous impact of soil degradation on human health? Which health impact is most underestimated or less obvious?• Are there any guidelines in your country/region to assess the impact of soil degradation on human health? To what threats do they refer?• Other comments
15.40 – 16.30	World café discussion around three questions: <ul style="list-style-type: none">• How to facilitate linking soil degradation data with databases on human health?• How to improve soil data collection to enable monitoring of soil degradation effects on human health?• What measures can reduce adverse effects of soil degradation for human health and what barriers limit their implementation?
16.30	Coffee break
17.00 – 17.50	Plenary discussion: <ul style="list-style-type: none">• Feedback from working groups• What are the three key messages and recommendations for the report?• How to raise awareness on the adverse impact of soil degradation on human health, and the need to protect soil resources?
17.50	Concluding remarks and next steps for the finalisation of the report
18.00	Closure and cocktail

Workshop 2: Potential of Earth Observation for improved soil monitoring

Facilitators: Rafal Wawer (IUNG, Poland), Antonio López-Francos (IAMZ-CIHEAM, Spain)

Earth Observation systems are gaining increasing importance in environmental studies and precision agriculture. Numerous methods were developed and are in current use in those domains, enabling soil physical and chemical features to be measured directly or indirectly via plant cover characteristics. Several satellite platforms are operational, including ESA's recent Sentinel Mission. However, there are still gaps in the approaches to enable a better combination of satellite and laboratory data for monitoring soil quality and degradation trends and for taking managerial decisions.

The SOILS4EU project has elaborated an in-depth report on the potential of earth observation for improved land and soil monitoring. The report contains a broad review of the available monitoring approaches and an evaluation in terms of measured parameters, gaps, potential for improvements and links with Earth Observation Systems. The report also provides a review of remote sensing techniques for soil monitoring applications and discusses their effectiveness, limitations and strengths, based on literature review. The draft report will be presented, discussed and complemented during the workshop. Group discussions will be organized to discuss examples of applications and potential benefits of connecting remote sensing data with ground measurements of soil cover.

Time	Session
14.30	Welcome and introduction to the programme
14.40 – 15.10	Presentation of the SOILS4EU report on “Potential of Earth Observation for improved soil monitoring” (IUNG)
15.10 – 15.40	Plenary discussion and feedback on the report: <ul style="list-style-type: none">• How effective is the use of remote sensing techniques to predict soil properties and monitor soil degradation? What are the risks?• What are the advantages and disadvantages of remote sensing techniques in comparison with mapping based on interpolated soil data?• What are the most promising areas of soil remote sensing applications considering both science and practice?• What online services using soil remote sensing data do you know or use?• Other comments
15.40 – 16.30	World café discussion around questions: <ul style="list-style-type: none">• How to improve existing soil monitoring programs in order to optimize synergies between remote sensing and field collected data?• What are the most important barriers for the wider implementation of Earth Observation data for soil characterisation and monitoring?• What should be the research and development directions to enhance EO in soil monitoring? New satellite missions? New processing, products?
16.30	Coffee-break
17.00 – 17.50	Plenary discussion: <ul style="list-style-type: none">• Feedback from working groups• What are the three key messages and recommendations for the report?• How to enhance the use of remote sensing data in agriculture and environmental protection?
17.50	Concluding remarks and next steps for the finalisation of the report
18.00	Closure and cocktail