

1st EUSO Stakeholder Forum

19-21 October 2021

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19.10.21 (AM)

09:45: Opening of Webex Room, Streaming Service and Slido

DRAFT AGENDA

10:00-12:30 Recent EU policy developments in soil

Moderator: Giovanni De Santi, European Commission JRC, Director Sustainable Resources

10:00 – Welcome, scope and update on EUSO

Giovanni De Santi European Commission JRC

10:10 - EU Soil Strategy

Claudia Olazabal European Commission DG ENV

10:30 - EU Mission: A Soil Deal for Europe: 100 living labs and lighthouses to lead the transition towards healthy soils by 2030

Kerstin Rosenow European Commission DG AGRI

10:45 - Zero Pollution Action Plan

Veronica Manfredi/Joachin D'Eugenio European Commission DG ENV

11:00 TBC

11:15 - EP soil resolution

Martin Hojsik European Parliament

11:30 - Land Information System for Europe

Chris Steenmans European Environment Agency

11:45 – Questions from audience & Discussion

12:30 – Closing remarks: Giovanni De Santi

Establishment of EUSO Technical Working Groups

To support the implementation and operation of the EU Soil Observatory, one of the objectives of the EUSO Stakeholder Forum is to establish a series of Technical Working Groups. These Technical Working Groups (TWG) are meant to mirror the specific needs of the EUSO by:

- *** supporting the implementation and eventual operation of the Observatory
- *** developing the EUSO knowledge base
- *** serving specific policy driven needs.

Each working group will be chaired by the JRC together with (up to) two co-chairs, representing the respective policy drivers and/or a recognised expert in the field. Technical Working Groups will be composed of a limited group of Stakeholders with a recognised background in the specific domain.

The duration of Technical Working Groups should be nominally 12-24 months to reflect concrete actions. Meetings of the Working Groups are variable but at least two meetings per year are foreseen. It is possible that more regular meetings may be required during the implementation phase and in response to specific policy support requests.

Following the Technical Sessions of the EUSO Stakeholder Forum, the JRC will invite nominations to be members of Working Group, on the basis of proven experience and capacity to contribute.

The initial meetings will be online only. Future meetings will probably be hybrid in nature.

The outcomes of the Technical Working Groups will be reported to both the Stakeholder Forum and relevant EC Services and Agencies.

The following TWG will be established as a result of the 2021 Stakeholder Forum:

****Integrated soil monitoring**

Scope: Contribute to development of an integrated monitoring system for the EU

****Soil pollution**

Scope: Support to 2022 Clean Soil Monitoring and Outlook Report

****Data integration**

Scope: Integration of relevant EU-wide data in EUSO/ESDAC?

****Soil biodiversity**

Scope: What should the EU do to protect soil biodiversity?

****Soil erosion**

Scope: Exploring the role of soil erosion in relation to land degradation, climate change, food security

A **Community of Practice on Citizen Engagement** will also be established.

19.10.21 (PM)

14:00-16:30 Core EUSO Objective: Integrated soil monitoring

Scope: Contribute to development of an integrated monitoring system for the EU

Moderators: Arwyn Jones/Anne Maréchal, EC JRC/EUSO

- Introduction and Scope: Arwyn Jones ,EC JRC/EUSO
- Soil monitoring in the Soil Strategy: Mirco Barbero, EC ENV
- Soil monitoring in the Soil Mission: Annette Schnegaans, EC AGRI
- Preliminary outcomes of EJP Soil WP6: Antonio Bispo, INRAE
- Indicators and thresholds for soil indicator set: Rainer Baritz, EEA
- Reflections on the LUCASA project: Andreas Baumgarten, AGES, Austria
- Alpine Soil Information System: Christian Stenier, Alpine Convention Soil Protection WG
- Monitoring of Urban Soils: Przemysław Charzyński, SUITMA Project / Nicolaus Copernicus University, Poland
- Monitoring soils in semi-natural landscapes: Bridget Emmett, UKCEH
- Experiences in peatlands: Mogens Greve, Aarhus University, Denmark (TBC) / Franziska Tanneberger, Greifswald Mire Centre, Germany
- Monitoring of forest soils: Nicole Wellbrock, ICP Forests/Thünen-Institut, Germany
- Worldsoils carbon mapping project: Zoltan Szantoi, European Space Agency

Other contributions from the audience

Questions and Discussion

- Indicators
- National and LUCAS sampling strategies/schemes
- Compare national and LUCAS datasets
- Methods to combine national and LUCAS datasets
- Methods to combine existing maps

Establishment of EUSO Monitoring Technical Working Group

Next steps & Conclusions

20.10.2021

10:00-12:30 Developing the EUSO Knowledge Base (Part 1)

10:00 Parallel Session 1a: Soil pollution

Scope: Support to Clean Soil Monitoring & Outlook Report

Moderators: Piotr Wojda EC JRC/EUSO

- Introduction and Scope: Piotr Wojda, EC JRC
- Zero Pollution Action Plan: Joachim D'Eugenio, EC ENV
- Soil pollution in the EU Soil Strategy: Bavo Peeters, EC ENV
- Zero Pollution Monitoring: Ian Marnane, EEA
- Clean soil outlook, context, structure, inputs watchlist and roadmap: Piotr Wojda, EC JRC
- Diffuse pollution – *plastic & pesticides*: Nicolas Beriot, Wageningen University & Research, NL
- Diffuse pollution – *metals*: Panos Panagos, EC JRC
- Contaminated sites: Frank Swartjes, EIONET Soil Pollution Working Group/RIVM, NL
- Common Forum (MS) Dietmar Müller-Grabherr
- Bauhaus – Brownfields' redevelopment (tbc)

Contributions from the floor

Questions and Discussion

Establishment of EUSO Zero Pollution Technical Working Group

Next steps & Conclusions

10:00 Parallel Session 1b: Data integration

Scope: how can relevant EU-wide data be integrated in EUSO/ESDAC?

Moderators: Introduction and Scope: Marc Van Liedekerke, Calogero Schillaci, JRC/EUSO

- Introduction and Scope: Marc Van Liedekerke, EC JRC/EUSO
- The integration of EU-project results in EUSO: Maria Jose Amaral, REA
- EJP-SOIL as soil data provider to EUSO: Maria Fantappie', CREA Italy/Fenny Van Egmond, ISRIC Netherlands
- Is there a role for the European Soil Partnership in contributing to EUSO? : Maria Fantappie', CREA Italy
- EEA and EUSO. Is effective collaboration needed? Rainer Baritz, EEA
- Is there a role for EU national soil data organizations in contributing to EUSO? : Antonio Bispo, INRAE France

Contributions from the floor

Questions and Discussion

Establishment of EUSO Data Integration Technical Working Group

Next steps & Conclusions

20.10.2021 (PM)

14:00-16:30 Developing the EUSO Knowledge Base (Part 2)

14:00 Parallel Session 2a: Soil biodiversity

Scope: What EU should do for protecting soil biodiversity?

Moderator: Alberto Orgiazzi, EC JRC/EUSO

- Introduction and scope: Alberto Orgiazzi, EC JRC/EUSO
- Soil biodiversity and EU environmental policies: Mirco Barbero, DG ENV
- Soil biodiversity and CAP: Olivier Diana, EC AGRI
- Soil biodiversity and private sector: Matteo Piombino, Corteva Agriscience
- Soil biodiversity and farming: Farmer - TBC
- How to tell soil biodiversity: Rolf Sommer/Michael Berger, WWF
- Soil biodiversity and IUCN Red List: Sarine Barsoumian, IUCN
- Global Fungal Red List Initiative (TBC)
- Soil biodiversity monitoring in France: INRAE
- Global monitoring of soil biodiversity: Carlos Guerra, SoilBON

Contributions from the floor

Questions and Discussion

Establishment of EUSO Soil Biodiversity
Technical Working Group

Next steps & Conclusions

14:00 Parallel Session 2b: Soil erosion in relation to land degradation, climate change & food security

Scope: What should the EU do to halt soil erosion?

Moderator: Panos Panagos, EC JRC/EUSO

- The post-2020 CAP and soil: Mike Mackenzie, EC AGRI
- Land use changes and Carbon fluxes: Julia Pongratz, Univ. Munich, Germany
- Food security and erosion: Christine Alewell, Univ. Basel, Switzerland
- Land degradation and the importance on Soil conservation: Edoardo Costantini, International Union of Soil Science Societies
- Gap of erosion models and Development of a network to validate models: Pasquale Borrelli, Univ. of Pavia, Italy
- An example of soil erosion monitoring in Flanders: Petra Deproost, Gov. of Flanders
- Chemical innovation to support sustainable agriculture and soil health: Claudio Screpanti, Syngenta
- Carbon sequestration in agricultural soils: Elizabeth Lunik, Rabobank
- Best practices followed by farmers: Sebastian Vogler, Farmer
- Afforestation to reduce land degradation: Rigas Tsakiris, NGO Green Institute

Contributions from the floor

Questions and Discussion

Establishment of EUSO Soil Erosion Technical
Working Group

Next steps & Conclusions

21.10.2021

10:00-12:30: Young Soil Researchers Forum

Scope: To provide a platform and voice for young soil researchers

10:00 Plenary Session

- Welcome: Alberto Orgiazzi
- JRC Doctoral Training Programme: Panos Panagos
- Housekeeping for Breakout Rooms: Arwyn Jones

10:10 Breakout Rooms (see Annex for programme of presentations)

- Soil erosion (Moderators: Panos Panagos & Francis Mathews)
- Soil organic carbon (Moderators: Calogero Schillaci & Anna Muntwyler)
- Soil biodiversity (Moderators: Alberto Orgiazzi & Maëva Labouyrie)
- Soil monitoring & contamination (Moderators: Diana Viere, Anne Maréchal & Julia Koeninger)

11:10 Break

11:20 Breakout Rooms (continued)

12:20 Plenary - Conclusions and way forward

Please see the Annex after this Agenda for a complete listing of the individual presentations in the Young Soil Researchers Breakout Rooms

14:00-16:30 Core EUSO Objective: Citizen Engagement - Soil Literacy (with Soil Mission)

Scope: To establish a Community of Practice on Citizen Engagement to support the implementation of the EU Soil Strategy and Soil Mission

Moderators: Arwyn Jones, EC JRC/EUSO & Arianna Pasa, EC AGRI/Soil Mission Secretariat

- Introduction and Scope: Arwyn Jones, EC JRC/EUSO
- Citizen engagement and the new EU Soil Strategy: Mirco Barbero EC ENV
- Introduction to the Citizen Engagement/Education/Communication elements in the Soil Mission: Arianna Pasa, EC AGRI
- Citizen Engagement: how to do it properly? Ângela Guimarães Pereira, EC JRC
- Education and youth programmes in Horizon Europe: Dalibor Mladenka DG EAC (tbc)
- The role of soil science in raising awareness - Gabrielle Broll (ENSA/University of Osnabruck, Germany), Christine Berrill (IUSS World Soil Congress), Anna Krzywoszynska (Soil Care Network), Bridget Emmett (CEH, UK)
- Experiences with local authorities: Christian Steiner (Lower Austria/ELSA), Francesco Malucelli (Regione Emilia Romagna, Italy)
- Global Soil Partnership & World Soil Day: Lucrezia Caon, FAO
- Youth awareness: Šarlote Abatniece, Raivo Kleijssen Laas, Darina Alexandrova (European School Students); Rebecca Lardeur, Youth4Climate Ambassador
- Soil Biodiversity Massive Online Course: Nelson Ribeiro Jorge, EC JRC
- Soil4Life Manifesto: Legambiente, Italy (tbc)
- Farmers and citizen engagement: Alfred Grand (tbc), Benedikt Bose (tbc)
- Mario Catizzone, Angeli del suolo

16:30 - 17:00 Summary and Close of Forum

Reflections: Luca Montanarella, EC JRC/EUSO

1st Young Soil Researchers Forum (YSRF) Programme

Soil Erosion

Moderators: Panos Panagos & Francis Mathews

order	Start time	Presenting Author	Title
1	10:10	Francis Mathews <i>JRC, KU Leuven</i>	Dynamic modelling of soil erosion and sediment delivery in Europe
2	10:17	Anita Bernatek-Jakiel <i>Jagiellonian University, Kraków</i>	Susceptibility of soils to piping erosion in Europe
3	10:24	Simon Scheper <i>Natural Hazards, Vienna</i>	Risk Assessment vs Wind Erosion Modelling
4	10:31	Sema Kaplan <i>Erciyes University</i>	Assessing the Performance of Wind Erosion Prediction Models (RWEQ & SWEEP)
5	10:38	Lena Katharina Öttl <i>University of Augsburg</i>	Tillage erosion as a driver of in-field biomass patterns and soil organic carbon dynamics
6	10:45	Osumgborogwu Ikenna <i>Durham University</i>	A multi-method approach to analyze changes in gully characteristics
7	10:52	Pinar Melis <i>Ankara University</i>	Upscaling cover management factor for different land use types in semi-arid agro-ecosystems
8	11:59	Filippo Milazzo <i>University of Córdoba</i>	The resilience of soil erosion rate under LUC and the role of the Mediterranean grassland
9	11:06	Tobias Koch <i>Agricultural Landscape (ZALF)</i>	Calibration of soil erosion models for permanent bioenergy crops
10	11:13	Konstantinos Kaffas <i>University of Bozen-Bolzano</i>	Event-based soil erosion and sediment yield modeling for modelling reservoir sedimentation in the Alps
11	11:20	Somil Swarnkar <i>Indian Institute of Technology</i>	Quantifying hydrogeomorphic and climatic controls on sediment dynamics in large Himalayan basins
12	11:27	Simoni Alexiou <i>Agricultural University of Athens</i>	Assessing soil erosion and sedimentation through high accuracy tLiDAR and UAV-Photogrammetry technique
13	11:34	Sophia Bahddou <i>Cranfield University</i>	Effect of random and oriented soil surface roughness on water infiltration, runoff and soil loss
14	11:41	Marta Basso <i>University of Aveiro</i>	A modelling approach to evaluate different post-fire management scenarios

15 11:48 Marcos Francos
University of Salamanca **Forest management to reduce wildfire severity and
avoid soil degradation in Mediterranean forests**

16 11:55 Joana Parente
Universidade de Lisboa **Assessing the impact of wildfires on long-term
erosion: : LAPSUS and IC**

12:02

Discussion

12:20

Return to main Forum

Soil Organic Carbon

Moderators: Calogero Schillaci & Anna Muntwyler

order	Start time	Presenting Author	Title
1	10:10	Anne Muntwyler <i>JRC and ETH Zurich</i>	Modelling agricultural soil P dynamics in a long-term experiment of north-eastern Italy
2	10:17	Simone Zepp <i>German Aerospace Center (DLR)</i>	Estimation of Soil Organic Carbon Contents in Croplands from SCMaP Soil Reflectance Composites
3	10:24	Julia Fohrafellner <i>BIOS Science Austria, Vienna</i>	Quality assessment of meta-analyses on Soil Organic Carbon research
4	10:31	Laura Sofie Harbo <i>Department of Agroecology, Aarhus University</i>	Changes in Danish agricultural soil SOC inventory between 2008 and 2018
5	10:38	Konstantinos Karyotis <i>Laboratory of Remote Sensing, Spectroscopy, and GIS, University of Thessaloniki</i>	A crowdsourcing spiked bottom-up approach for Soil Organic Carbon mapping through multispectral imagery analysis.
6	10:45	Asma Jebari <i>Basque Centre for Climate Change, Bizkaia</i>	Regional modelling of Soil Organic Carbon changes and greenhouse gas emissions in grasslands associated to cattle dairy production in Northern Spain
7	10:52	Elisa Bruni <i>Laboratoire des Sciences du Climat et de l'Environnement, Saclay, Gif-sur-Yvette</i>	Assessing the feasibility of Soil Organic Carbon stock increase in Europe with a multi-modelling
8	11:59	Zsófia Adrienn Kovács <i>Institute for Soil Sciences and Agricultural Chemistry, Budapest</i>	Soil organic carbon content predicting based on PRISMA hyperspectral satellite imagery and synthesized LUCAS SOIL spectral data
	11:06		Break
9	11:13	Melani Cortijos-López <i>Instituto Pirenaico de Ecología, Zaragoza</i>	Mediterranean mid-mountain adaptation to Global Change: land management as strategy for enhancing Soil Carbon stock
10	11:20	Moritz Koza <i>Institute of Geosciences and Geography, Martin Luther University, Halle Wittenberg</i>	Natural limitations influence the effect of tillage on aggregation in dry steppe soils
11	11:27	Murphy Rachael <i>Trinity College Dublin, Dublin and Teagasc, Wexford</i>	Nitrous oxide emissions determined by eddy covariance and SC methods from a grazed grassland
12	11:34	O'Neill Rosie <i>Trinity College Dublin, Dublin and Teagasc, Wexford</i>	

The effect of carbon availability on N₂O emissions is moderated by soil phosphorus

13	11:41	Olha Khomenko <i>Teagasc, Wexford and Department of Chemical Sciences, University of Limerick</i>	Phosphorus availability and dynamics in soils amended with recycled dairy processing sludge
14	11:48	Dawid Kupka <i>Department of Forest Ecology and Silviculture, Krakow</i>	How does climate change affect the soil organic matter of spruce stand soils?
15	11:55	Maria Nolan <i>University of Plymouth</i>	Multi-dimensional environmental factors drive Soil Organic Matter formation across vegetation communities in a freshwater wetland
16	12:02	Łukasz Musielok <i>Institute of Geography and Spatial Management, Jagiellonian University, Kraków</i>	Linkage between land cover change and Soil Organic Carbon sequestration in mountain ecosystems
	12:09		Discussion
	12:20		Return to main Forum

Soil biodiversity

Moderators: Alberto Orgiazzi & Maëva Labouyrie

Start time	Presenting Author	Title
10:10	Maëva Labouyrie <i>Zurich University, JRC</i>	Soil microbial diversity and ecosystem functioning assessment across Europe
10:20	Linnea Smith <i>iDiv</i>	Large-scale drivers of relationships between soil microbial properties and organic carbon across Europe
10:30	Dajana Radujković <i>Antwerp University</i>	Consistent predictors of microbial community composition across scales in grasslands reveal low context-dependency
10:40	Sorcha R. Kelly <i>Teagasc, James Hutton Institute, National Uni of Ireland Galway</i>	Soil nitrogen mineralisation, microbial community, and enzymatic activity are impacted by soil type and nutrient management
10:50	Rémy Beugnon <i>iDiv, Leipzig University</i>	Tree diversity effects on litter decomposition are mediated by litterfall and microbial processes
11:00	Katy J. Faulkner <i>University of Warwick</i>	High rainfall disturbs soil microbial structure and function in a temperate forest under elevated CO₂
11:10		10 minutes break
11:20	Carmen Vazquez <i>Wageningen University</i>	The evolution of biological soil quality under long term agricultural management
11:30	Pilar Gavín-Centol <i>EEZA – CSIC</i>	Feeding activity of soil detritivores in wheat fields: relationship between depth, drought and farming systems
11:40	Victoria J Burton <i>Natural History Museum</i>	Historical changes of land use on local soil and leaf-litter biodiversity
11:50	Michael Steinwandter <i>Eurac Research</i>	High alpine soil macro-invertebrates communities – First results from three elevation gradients (1500–3000 m)
12:00	Gemma Collins <i>Senckenberg Biodiversity and Climate Research Center</i>	Comparing soil invertebrate genomes for functional trait differences
12:10	Romy Zeiss <i>Leipzig University</i>	Challenges and opportunities for protecting European soil biodiversity
12:20		Return to main Forum

Soil monitoring and contamination

Moderators: [Diana Viere](#), [Anne Maréchal](#) & [Julia Koeninger](#)

Start time	Presenting Author	Title
10:10	Julia Köninger <i>U. Vigo, JRC</i>	Manure management and soil biodiversity: Towards more sustainable food systems in the EU
10:18	Diego Baragaño <i>U. Oviedo</i>	Unravelling graphene oxide effects on arsenic and metals mobility, soil microbiology and plant physiology during polluted soil (nano)remediation
10:26	Szimana Zorzsevszkij <i>CZU Prague</i>	Effect of soil water content on metal(loid) stabilization by amendments in a contaminated mine technosol
10:34	Miroshnychenko Inna <i>USRIEP Kharkiv</i>	Dynamics of self-cleaning processes in the oil-contaminated Chernozem
10:42	Paul Drenning <i>Chalmers UT, COWI AB</i>	Phytomanagement of Contaminated Sites
10:50	Inés Pereira-Rodríguez <i>U. León</i>	Mining waste distribution in torrential wadis: analysis with sentinel-2 of Cartagena mining district
10:58	Leonidas Liakos <i>JRC</i>	Challenges in geo-processing of Large scale Soil datasets. A geographer's perspective.
11:06		Break
11:15	Antonio Rodríguez Hernández <i>INIA-CISA/CSIC</i>	Targeted monitoring of veterinary pharmaceuticals in the environment based on soil vulnerability to antibiotic contamination
11:23	Chris Feeney <i>UKCEH, ECW</i>	Ensemble soil map assessment highlights challenges for predicting topsoil organic carbon concentration at national scale.
11:31	Olivia Azevedo <i>U. Stirling</i>	Historical effects on aggregate stability and SOC storage during forest succession
11:39	Florian Laurysena <i>KU Leuven</i>	Survey in old forests sediments to infer phosphorus reference conditions in Flanders
11:47	Yakun Zhang <i>U. Wisconsin-Madison</i>	Spectra-informed soil profile characterization and soil classification
11:55	Giulio Genova <i>Free U. Bolzano</i>	Land-use history and trace metal concentration to assess the impact of agricultural management on soil
12:03	Daniel L. Evans <i>Cranfield U.</i>	Sustainability rooted in soil science
12:13		Discussion
12:20		Return to main Forum

