Soil Science in a Changing World

23–27 August 2015

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Quotation from or reference to any part of this conference guide should be made with full reference to the above data

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Welcome

We are proud and honoured to welcome you to the second edition of the Wageningen Soil Conference. Recently, I stumbled on a quote by Mehmet Murat Ilday, who stated that "Sand is for fun; soil is for life!". Indeed, soils sustain life on earth, through ecosystem services such as food production, water storage, and climate change mitigation.

The relevance of soils and soil science seems to be increasingly reflected by public and policy attention. 2015 has been declared the International Year of Soils by the United Nations, and next month countries will meet to decide on newly formulated Sustainable Development Goals (SDGs). SDG #15 (... combat desertification, halt and reverse land degradation, ...) specifically addresses soil issues. Many others (e.g. #2: End hunger, achieve food security ...; #13; ...combat climate change and its impacts) can only be reached with thoughtful use of soil ecosystem services.

At the Wageningen Soil Conference we strive to connect soil science to major societal challenges. How does profound understanding of soil processes and dynamics contribute to combating and mitigating the challenges of our time: food security, water resources, climate change, land functions, and ensuring biodiversity? How can we ensure that soil knowledge is utilized to take effective measures, and how do we make sure soil scientists address the questions that are relevant to society?

The four conference days will provide a mix of key-note lectures, parallel sessions, poster sessions, discussions and excursions. With the 200 participants, we hope and expect to foster knowledge exchange and encourage lively discussions on the contributions of soil science to society as well as the societal soil demands.

I hope the Wageningen Soil Conference will provide you inspiration and enjoyment, as soils are not only for life, but also for fun!

Prof dr Jakob Wallinga, chair scientific committee

Organising committee

Boris Jansen  Saskia Keesstra  Gerben Mol  Anne Zaal
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Sponsors

The Organising Committee gratefully acknowledges the support of:

**Wageningen University**
Department of Environmental Sciences
- Soil Biology and Biological Soil Quality
- Soil Chemistry and Chemical Soil Quality
- Soil Physics and Land Management
- Soil Geography and Landscape

**Alterra Wageningen UR**
- Team Animal Ecology
- Team Sustainable Soil Management
- Team Soil, Water and Land Use

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**ESTEDE | Scientific Testing Equipment**
Committee

Organising Committee

- Prof dr Jakob Wallinga
  Wageningen University, The Netherlands
- Dr Boris Jansen
  Universiteit van Amsterdam, The Netherlands
- Dr Saskia Keesstra
  Wageningen University, The Netherlands
- Dr Gerben Mol
  Alterra Wageningen UR, The Netherlands
- Anne Zaal Msc
  Alterra Wageningen UR, The Netherlands

Conference Secretariat

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  Alterra Wageningen UR, The Netherlands
- Anne Zaal Msc
  Alterra Wageningen UR, The Netherlands

Scientific Committee

- Prof dr J. Wallinga (chairman)
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  University of Lancaster, United Kingdom
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  University of Napoli, Italy
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  University of Exeter, United Kingdom
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  ISRIC World Soil Information, The Netherlands
- Dr L. Montanarella  
  European Commission, Joint Research Centre, Italy
- Prof Dr J. Bouma  
  Wageningen University
- Prof Dr M. Kibblewhite  
  Cranfield University, United Kingdom
Programme
Programme

Sunday, August 23rd 2015
18.00 – 19.00  Icebreaker, drinks & bites and Pre-registration - Café Loburg (Molenstraat 6, 6701 DM Wageningen)

Monday, August 24th 2015
08.30  Arrival / Registration – Lobby, Orion Building (Bronland 1, Building 103, 6708 WH Wageningen)
Poster Placement, Coffee
09.30 – 09.45  OPENING SESSION – Plenary meeting room (Orion 1040)
Welcome – Jakob Wallinga, chair Scientific Committee
Opening address - Louise Fresco, President Executive Board Wageningen UR

THEME 1: FOOD SECURITY
Chair: Martin van Ittersum
09.45 – 10.10  KEYNOTE – Plenary meeting room (Orion 1040)
Bernard Vanlauwe, International Institute of Tropical Agriculture (IITA), Kenya
Pathways towards the sustainable intensification of smallholder farming systems in Sub-Saharan Africa
10.10– 10.35  KEYNOTE – Plenary meeting room (Orion 1040)
Deborah Bossio, Soils Research Area Director, CIAT International Center for Tropical Agriculture, Kenya
Soil organic matter for climate change mitigation: boon or bane for food security?
10.35 – 11.15  Plenary discussion - (Orion 1040)
11.15 – 11.45 One minute poster pitches – Plenary meeting room (Orion 1040)
Presented posters:
Azita Behbahaninia: Cadmium and lead transport in the soil and plants under sewage sludge application
Naser Boroomand: Kinetics of zinc desorption from calcareous soils: influenced by concentration and time of poultry manure
Lambert Bräu: Enhancement of phosphate Acquisition and delivery to plants using the cyanobacterium Nostoc Punctiforme

Jelle Dijkema: Beneficial soil microbes reduce plant disease, with implicated improvements in fruit flavour profiles, nutritional value and human health

Leyla Hassani Rezaei: Quantitative assessment of linear sorghum response functions to combined salinity urea

Chantal Hendriks: Soil qualities or soil properties? A novel approach for soil data to address food security

Hala Kandil: Effect of agrosol treatment and phosphorus levels on pea plants (pisum sativum l.)

Lammert Kooistra: Use of RGB aerial photographs for assessment of soil organic carbon distribution in agricultural fields

Richard Kraaijvanger: Evaluating resource use efficiency and stock balances of fertilizer inputs: the effect of soil supply capacity in Tigray (Ethiopia);

Richard Kraaijvanger: Four years of farmer experimentation on soil fertility in Tigray, northern Ethiopia: trends in research strategies

Johan Leenaars: Soil information to feed the African soil, crop and people

Florence Leprince: Impact of a legume living mulch on winter wheat yield and its nitrogen nutrition

Juan Carlos Mendez: Interpolation and validation of soil fertility data in three agricultural cooperatives in Costa Rica

Mikael Motelica-Heino: A new agro-ecologic paradigm for food security in the Sudano-Sahelian zone

Yang Peipei: Yield responses to nutrient management and soil quality in long-term field trials in China

Maria Ruiperez Gonzalez: Digital Mapping of Soil Nutrients for the Republics of Burundi and Rwanda

Maricke van Leeuwen: A quantitative approach on visual soil assessment: validation and reproducibility

Winnie van Vark: Comparable and reliable data from Laboratories within Global Soil Research

Vaclav Voltr: Validation of soil fertility and productivity in the Czech Republic

Jiri Zbiral: Characterization of soil organic matter by near infrared spectroscopy – determination of Glomalin in different soils

11.45 – 12.15 Poster sessions with coffee break with cake – Restaurant ‘The Spot’, Orion building
12.15 – 13.45 PARALLEL SESSIONS

2 sessions with 6 oral presentations

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<th>Water Resources 1 (Orion 2051)</th>
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<td>12.15 – 12.30</td>
<td>Takoutsing Bertin</td>
<td>Hendrik Bruins</td>
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<td>Land health surveillance for</td>
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<td>12.30 – 12.45</td>
<td>Lieven Claessens</td>
<td>Antonietta La Terza</td>
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<td>The Global Yield Gap Atlas for</td>
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<td>targeting sustainable intensification</td>
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<td>options for smallholders in Sub-</td>
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<td>Saharan Africa</td>
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<td>12.45 – 13.00</td>
<td>Renske Hijbeek</td>
<td>Miriam Muñoz-Rojas</td>
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<td>Effects of organic matter on</td>
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<td>attainable yields across Europe</td>
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<td>13.00 – 13.15</td>
<td>Veronika Hansen</td>
<td>Jianhui Zhang</td>
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<td>Gasification biochar has the</td>
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<td>13.15 – 13.30</td>
<td>Christy van Beek</td>
<td>Wei Shangguan</td>
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<td>Fertile grounds initiative: it’s not</td>
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<td>the people who manage the soil</td>
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<td>13.30 – 13.45</td>
<td>Rafael Segura-Mena</td>
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<td>Soil management as an effective</td>
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<td>strategy for crop disease management:</td>
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<td>the case of Panama disease in banana</td>
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THEME 2: WATER RESOURCES
Chair: Artemi Cerdà

14.45 – 15.10 **KEYNOTE** – Plenary meeting room (Orion 1040)
John Quinton, Lancaster Environment Centre, Lancaster University, United Kingdom
Soil water: the nexus for food production and environmental quality

15.10 – 15.35 **KEYNOTE** – Plenary meeting room (Orion 1040)
Günther Blöschl, Institute of Hydraulic Engineering and Water Resources Management, Vienna University of Technology, Austria
Floods across scales in a changing world

15.35 – 16.15 Plenary discussion - (Orion 1040)

16.15 – 16.45 One minute poster pitches – Plenary meeting room (Orion 1040)

Presented posters:

Dwi Priyo Ariyanto: Short Drought Irrigation by Small-Farm Reservoir at Rainfed Lands

Vasiliki Bota: Determination of hydraulic conductivity in unsaturated soil samples

Artemi Cerdà: Changes in soil infiltration rates after wildfires in the Serra de Grossa and the Massís del Caroig, Eastern Spain

Artemi Cerdà: Rice straw as a cover mulch to reduce overland flow in olive plantations in the Enguera municipality. Eastern Iberia Peninsula

Saeid Hamzeh: Modelling shallow groundwater in sugarcane fields using hyperspectral satellite imagery

Saskia Keesstra: Assessing catchment connectivity using hysteretic loops

Florence Leprince: Evaluation of pesticide's leaching under drainage conditions in a laboratory tracing experiment with controlled conditions

Florence Leprince: Long term impact of no tillage on water and solute flux in drainage

Jestinos Mzezewa: Water infiltration patterns under in-field water harvesting tillage in the semi-arid Limpopo Province of South Africa

Estela Nadalromero: Hydrological connectivity dynamic and temporal stability in an afforestation area in the Central Spanish Pyrenees

Muhammad Sanaullah: Water balance assessment of a river bounded aquifer using visual MODFLOW® applications, Eastern Punjab, Pakistan

Ieyasu Tokumoto: Simulation of leaching and rootzone salinity control at tsunami affected rice fields in Miyagi, Japan
Jos van Dam: When do soil hydraulic properties matter for root water extraction?

Erik van den Elsen: Errors in volumetric water content measurements due to field variability


17.15 – 18.45 PARALLEL SESSIONS

2 sessions with 6 oral presentations

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<td>17.15 – 17.30 Zhiping Cao</td>
<td>Martine van der Ploeg</td>
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<td>Gaia theory: the valve mechanism of phosphorus cycling</td>
<td>The landscape of biophysical interactions</td>
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<td>17.30 – 17.45 Jessica Mackay</td>
<td>Mirjam Hack-ten Broeke</td>
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<tr>
<td>Evaluation of organic amendments, soil microbes and plant P uptake</td>
<td>Quantification of the impact of hydrology on agricultural production</td>
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<td>17.45 – 18.00 Hanan Siam</td>
<td>Paul Murphy</td>
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<td>Improving Calcareous soli productivity by integrating effect of compost or Sulfur in the presence of different sources of phosphorus</td>
<td>Effects of mitigation measures on phosphorus loss across the transfer continuum from soil to water in a monitored dairy grassland catchment</td>
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<td>18.00 – 18.15 Ahmed Afifi</td>
<td>Iael Raij</td>
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<td>Identification and quantification of P mineralogical forms in sandy calcareous soils by infrared spectroscopy and chemometric methods: an approach by increasing complexity</td>
<td>Optimization of in-situ drainage lysimeters for fertigation efficiency</td>
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<td>18.15 – 18.30 Jordon Wade</td>
<td>Yasser Refaey</td>
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<td>Can Soil Respiration Predict N Mineralization?</td>
<td>Adsorption of copper, nickel, and zinc as related to soil constituents and timing of addition of dissolved organic carbon</td>
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<td>18.30 – 18.45 Supriatin</td>
<td>Aneta Trajanov</td>
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<tr>
<td>Selenium Speciation and Extractability in Dutch Agricultural Soils</td>
<td>Assessing the risk of tile-drained water pollution with pesticides</td>
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<td>18.45 – 19.45 Snacks with refreshments sponsored by WEPAL and poster sessions – Restaurant ‘The Spot’, Orion building</td>
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Tuesday, August 25th 2015

Excursions, with various options.

At 19.00 hours the Conference dinner starts at Restaurant H41.
We offer an Italian buffet style dinner with drinks, dessert and coffee. You can find Restaurant H41 in Wageningen City Centre, Heerenstraat 41, 6701 DH Wageningen.

Excursions and dinner are not included in the standard Conference fee; participating in these events requires prior registration and payment or payment on site at the conference desk.

The excursions will be guided by scientists and most of the excursions have a scientific character; some are combined with a cultural treat. Most of the excursions will leave around 08.30 at the Hof van Wageningen and return around 17.30 hrs; transport, coffee/tea, packed lunch and refreshments are included.

All our excursions include shorter or longer walking trips in the open air, so we advise you to bring watertight easy walking or hiking shoes and rain clothes with you. The average temperature in August is 19-21 degrees Celsius, with a fair possibility of rainfall.

1. A combined excursion in Wageningen: Wageningen Campus: ISRIC-World Soil Museum, Wepal and NIOO

Excursion leader Thomas Caspari, ISRIC

The excursion starts with a visit to the ISRIC-World Soil Museum. We will then visit the new NIOO premises including laboratories. We will take a short bus tour to WEPAL where we will have lunch and a guided tour.

The first excursion point will be ISRIC-World Soil Information. Since 1966 this institute is serving the international community as custodian of world soil data and information. During a guided tour through the ISRIC World Soil Museum you will be able to explore the largest soil monolith collection in the world, and learn how soils are connected to global challenges. Please visit isric.org for more information.

This trip will leave at the Hof van Wageningen on 08.30 hrs and return at the Hof van Wageningen around 14.30-15.00 hours. In the afternoon you will have some time to explore Wageningen yourself.

2. Excursion to the National Park Hoge Veluwe

Excursion leader: Roel Dijksma, Wageningen UR, Section Hydrology and Quantitative Water Management

National Park Hoge Veluwe is a relic from glaciers that covered the Netherlands during Saalien (2 104 – 1.2 104 years ago). It is a large complex of ice-pushed ridges with an elevation up to 110 m+NAP. Excess rainwater can infiltrate in the sandy soil and feeds the underlying aquifer. This groundwater rises to the surface in springs and brooks in the surrounding area. In this excursion the geology and related water management of the region will be shown. The excursion will start on top of an ice-pushed ridge with an overview to the adjacent river landscape. Then we will visit an old mill-brook, which is fed by Veluwe water, and some of the upper branches of this brook (manmade springs). This field trip is followed by a visit in the afternoon to the National Park Hoge Veluwe and the Kröller Muller Museum which hosts many famous paintings of Dutch masters such as Van Gogh. De Hoge Veluwe National Park is the
largest actively managed conservation area in private hands in the Netherlands. The Park covers 5,400 hectares of woodland, heathland, peat bogs and drift sand. It enjoys a wide variety of plants and animals and provides habitats to extremely rare Red List species.

You have the possibility to have a guided nature walk in the park or enjoy a visit to the Kröller-Müller museum on your own. This trip will leave by bus at the Hof van Wageningen on 08.30 hrs and return around 17.30 hours.

3. An excursion about 200,000 years of landscape formation in the surroundings of Wageningen: consequences for current day use

*Excursion leader: Arnoud Temme, Wageningen UR, Section Soil Physics and Land Management*

The Saalien ice age has set the scene for today's landscape around Wageningen: the cover ice reached the area and deep depressions and pushed moraines were formed. Since then, the landscape was further shaped by a combination of climate change, geomorphological processes, soil formation, vegetation dynamics, and human influence. This excursion tells the fascinating story of this dynamic landscape and discusses the consequences for current day use.

This trip will leave by bus at 8:30 from the 'Hof van Wageningen' and returns at ca. 17.30 (there will be relatively little 'bus time' but we will be most of the time in the field). Amongst the places we visit are: the Wageningse Berg, Rhenen/Veenendaal (Grift waterway), Doorwerth, Bennekom, the Floodplains of Wageningen.

4. Geological and landscape evolution of the Rhine-Meuse delta

*Excursion leader: Kees Kasse, VU university Amsterdam, Section Climate Change and Landscape Dynamics*

The excursion will demonstrate the geological and landscape development of the Rhine-Meuse delta in the western and central Netherlands during the Late Pleistocene and Holocene. The impact of climate, sea-level rise and man on delta evolution will be demonstrated in several excursion stops. We will make a west to east transect through the delta starting at the present-day coast where the (sub)recent coastal development and dune formation will be shown. East of the present-day dunes older Holocene coastal barriers systems are present and their relation to Holocene sea-level rise will be explained. The western part of the Netherlands consists of Holocene back-barriers deposits like tidal flat sediments and peats that will be shown by coring. Human reclamation of the peat lands since the late Middle Ages, peat digging and destruction of the landscape followed by lake drainage in historic times will be shown in the field and museum. Further to the east the impact of the river Rhine on the Holocene delta formation is more prominent and a fossil fluvial Rhine course will be visited. Finally, the impact of continental (Scandinavian) glaciation (~150,000 years ago) on the Rhine-Meuse delta and its influence on landscape evolution until the present day will be elucidated in the central Netherlands.

This trip will leave around 08.15 hours at the Hof van Wageningen and return around 17.30 hours.

Disclaimer: The Wageningen Soil Conference-excursions are subject to availability and will be offered to participants of the Conference who have registered and paid the separate fee for an excursion. All best endeavours will be made to present the tour programme as published. However, the Wageningen Soil Conference reserves the right to alter or cancel without prior notice, any of the arrangements, timetables, plans or other items relating directly or indirectly to the tour programme for any reason beyond its reasonable control. Wageningen UR is not liable for any loss or inconvenience caused as a result of such alteration. *Please be aware that participants take part at their own risk. Wageningen UR will not be responsible for personal injury or loss or damage of property.*
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<td>Welcome: Jakob Wallinga</td>
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<td>09.45-11.45</td>
<td>Opening session: Louise Fresco</td>
<td>1) A tour of the Wageningen campus, starting with the IBRC World Soil Museum, lunch at Wagaplace and a tour of the NOD premises</td>
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<td>Plenary meeting room: Orion 1400</td>
<td>2) Excursion to the National Park Hoge Veluwe, followed by a visit to the Kröller-Müller museum</td>
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<td>09.45-09.55</td>
<td>FOOD SECURITY</td>
<td>3) Soilscape Wageningen: soils and landscapes around Wageningen</td>
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<td>Plenary meeting room: Orion 1400</td>
<td>4) Breakfast features of the Meerdries lands through the west and middle part of the Netherlands</td>
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<td>Keynotes: Bernard Vanlauwe, Deborah Bossio</td>
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<td>11.15-11.45</td>
<td>Plenary discussion</td>
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<td>11.45</td>
<td>One minute poster pitches Food Security</td>
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<td>12.00-12.30</td>
<td>Poster sessions with coffee break &amp; snacks</td>
<td>(Restaurant The Spot, Orion)</td>
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<tr>
<td>12.30</td>
<td>Lunch &amp; Poster Sessions</td>
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<td>One minute poster pitches Water Resources</td>
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<td>16.00</td>
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<tr>
<td>18.45</td>
<td>Drinks &amp; snacks &amp; poster sessions</td>
<td>(Restaurant The Spot, Orion)</td>
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### Conference 2015
**Date:** August 23 - 27

#### Conference Program

<table>
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<th>Time</th>
<th>Wednesday 26th August</th>
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<tr>
<td>08.00</td>
<td>Arrival/registration, poster placement, coffee</td>
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<tr>
<td>08.30</td>
<td><strong>GOVERNANCE AND POLICY</strong></td>
<td><strong>LAND FUNCTIONS</strong></td>
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<td>08.45</td>
<td>Keynotes: Rudolph Vergunst, Genta Verburg, Chair: Luca Montanarella</td>
<td>Keynotes: Gerard Goovers, Jetze Stooveveld, Chair: Viellette Elsken</td>
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<tr>
<td>10.30</td>
<td>Plenary Discussion</td>
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<td>10.50</td>
<td>Poster pitches Governance &amp; Policy</td>
<td>One minute poster pitches Land Functions</td>
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<td>11.00</td>
<td><strong>Parallel Sessions:</strong></td>
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<td>12.00</td>
<td>Lunch &amp; Poster Sessions (Restaurant The Spot, Orinon)</td>
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<td>14.00</td>
<td><strong>BIODIVERSITY</strong></td>
<td><strong>CLIMATE CHANGE</strong></td>
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<td>14.10</td>
<td>Keynotes: George Kowalchuk, Laurent Philippart, Chair: Laurent Bertsch</td>
<td>Keynotes: Ingrid Kögel-Knabner, Pete Smith, Chair: Kirsten Kubb\n</td>
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<td>16.00</td>
<td>One minute poster pitches Biodiversity</td>
<td>One minute poster pitches Climate Change</td>
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<td>16.30</td>
<td>Poster sessions with coffee break</td>
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<td>Drinks &amp; Bites &amp; Poster Sessions (Restaurant The Spot, Orinon)</td>
<td>Conference closure - Jakob Wallings, chair Drinks &amp; Bites &amp; poster sessions (Restaurant The Spot, Orinon)</td>
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<td><strong>Side Events:</strong></td>
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<td>FACC on Thematic Annual Programming Network on Agricultural Soil Quality Improvement Workshop</td>
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Wednesday, August 26th 2015

08.00  Arrival / Registration – Lobby, Orion Building
       Poster Placement, Coffee

THEME 3: GOVERNANCE AND POLICY
Chair: Luca Montanarella

08.30 – 08.55  KEYNOTE – Plenary meeting room (Orion 1040)
               Ronald Vargas Rojas, Soils and Land Management Officer, FAO
               Soil governance: a precondition for sustainable development

08.55 – 09.20  KEYNOTE – Plenary meeting room (Orion 1040)
               Gerda Verburg,
               We need collaboration and concrete results

09.20 – 10.00  Plenary discussion - (Orion 1040)

10.00 – 10.10  One minute poster pitches – Plenary meeting room (Orion 1040)
               Presented posters:

               Mark Kibblewhite: Valuing and managing urban soil resources for food production

               Sandra Boekhold: Get inspired – help share the European Strategic Research Agenda on soil, land use and land management

               Jacynthe Masse: Microbial communities and nitrogen cycle in reclaimed oil-sand soils

10.10 – 10.30  Poster pitches ISCRIC-session – Plenary meeting room (Orion 1040)
               Presented posters:

               Oene Oenema: Relating variations in crop yields to soil quality; a case study

               Yengoh Genesis: Perennial polycultures replacing annual monocultures? Implications for soil management and sustainable agriculture

               Jannes Stolte: Soil threats in Europe

               Wang Shangguan: Soil information for Earth system modelling

10.30 – 11.00  Poster sessions with coffee break – Restaurant 'The Spot', Orion building
<table>
<thead>
<tr>
<th>Time</th>
<th>Session Governance and Policy 1 (Orion 1040)</th>
<th>Session Biodiversity 1 (Orion 2005)</th>
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</table>
| 11.00 – 11.15 | Sandra Boekhold  
Soil organic matter for food, water, climate, energy and health | Gera Hol  
Impact of microbial species on rhizosphere microbiome assembly |
| 11.15 – 11.30 | Lucie Greiner  
Assessment and mapping of soil services for spatial planning procedures | Anne Winding  
Assessment of soil microbial diversity with functional multi-endpoint methods |
| 11.30 – 11.45 | Rogier Schulte  
Making the most of our land: meeting supply and demand of soil functions from farm to European scale | Mart Ros  
Underlying mechanisms driving earthworm-induced increases in phosphorus availability |
| 11.45 – 12.00 | Siva Muthuprakash  
Significance of soil parameters in evaluating the farming practices: a systems approach | Jack Faber  
Land use intensity impact on functional diversity in earthworms regarding regulation of soil structure and water infiltration |
| 12.00 – 12.15 | Willie Towers  
The Scottish Soil Framework: implementing Soil Protection Policy at regional scale | Michiel Rutgers  
Mapping earthworm communities in Europe |
| 12.15 – 12.30 | Johan Bouna  
Business-as-usual will not suffice when contributing to the Sustainable Development Goals | Rachel Creamer  
Eco-Finders: defining biological indicators of three soil functions across Europe |

**Optimizing Soil Information Services for Solving Global Issues (ISRIC session) (Orion 2051)**

**Chair:** Rik van den Bosch

| Time       | KEYNOTE Speaker:  
Pete Smith  
Soil data needs for a global framework for soil carbon modelling | Niels Batjes  
New gridded data sets for global sustainability studies - WISE30sec and SoilGrids |
|------------|-------------------------------------------------|---------------------------------|
| 11.00 – 11.22 | **KEYNOTE Speaker:** Pete Smith  
Soil data needs for a global framework for soil carbon modelling | Niels Batjes  
New gridded data sets for global sustainability studies - WISE30sec and SoilGrids |
| 11.22 – 11.39 | Niels Batjes  
New gridded data sets for global sustainability studies - WISE30sec and SoilGrids |
11.39 – 11.56  *Lenny van Bussel*
Comparative analysis of options for the spatial framework of yield gap analyses: a focus on soil data

11.56 – 12.13  *Thomas Terhoeven*
Archetypal analysis of soil fertility indices (soil testing results) as basis for soil improvement strategies: example for three Kenyan counties

12.13 – 12.30  *Bas van Wesemael*
Estimating topsoil organic carbon stocks in Europe using geo-referenced harmonised topsoil and land cover data

12.30 – 14.00  Lunch and poster sessions – *Restaurant ‘The Spot’, Orion building*

**THEME 4: BIODIVERSITY**  
*Chair: Lijbert Brussaard*

14.00 – 14.25  **KEYNOTE** – *Plenary meeting room (Orion 1040)*
George Kowalchuk, Institute of Environmental Biology, Utrecht University, The Netherlands
Exploring and explaining the magnitude of soil-borne microbial diversity

14.25 – 14.50  **KEYNOTE** – *Plenary meeting room (Orion 1040)*
Laurent Philippot, Agroecology Department, INRA Dijon, France
Linking soil microbial diversity, nitrogen cycling and greenhouse gas emissions

14.50 – 15.30  Plenary discussion - *(Orion 1040)*

15.30 – 15.45  One minute poster pitches – *Plenary meeting room (Orion 1040)*
Presented posters:

George Ametsitsi: The role of soils in the distribution of forest and savannah vegetation in an ecotone

Denisse Archundia: Sulfamethoxazole sorption in soils of the Bolivian Altiplano and impacts on bacterial populations.

Pella Brinkman: Centre for Soil Ecology (CSE)

Federica D. Conti: Biochar in soils: effects on soil microarthropods

Joana Frazão: Earthworm communities in relation to arable management in a landscape context

Amber Heijboer: Linking microbial diversity to the functioning of soil food webs using stable isotope probing

Gera Hol: Waking up the microbial seedbank: which rare bacteria are opportunists?
Célia Patricia Martins Bento: Glyphosate decay in loess soil: is glyphosate a major risk for soil contamination?

Dominika Piwcewicz: Multielemental stoichiometry: what is the impact of funghi and bacteria on decomposing litter

Saeideh Rajaei: DNA Extraction from Pistachio roots with the aim of endophytic studies

Naomi Rintoul: Effects of soil contamination from historical industrial sources on plant biodiversity

Xiaomei Yang: Glyphosate decay and transport related with soil erosion in Loess soil, China

Marleen Zanen: Effect of no-till versus ploughing on soil quality and wheat yield on heavy clay soils

16.00 – 16.30 Poster session with coffee break – Restaurant 'The Spot', Orion building

16.30 – 18.00 PARALLEL SESSIONS

2 sessions with 6 oral presentations

**Session Biodiversity 2**  
*Orion 1040*  
Chair: Lijbert Brussaard

- Antonietta La Terza  
  Soil biodiversity and sustainable vineyards: hints from the analysis of microarthropods and ciliated protozoa communities

- Lizeth Manuela Avellaneda-Torres  
  Evaluation of changes in soil quality in coffee agroecosystems (ecological and conventional) with different scores of resilience to climate variability in Anolaima, Colombia

16.30 – 17.00

- Elly Morriën  
  Soil biodiversity and nutrient cycling in an agricultural land abandonment chronosequence

- Ute Hamer  
  Afforestation or intense pasturing improve the ecological and economic value of abandoned tropical farmlands – the soil perspective

17.00 – 17.15

- Guénola Pérès  
  Is reduced tillage systems a sustainable arable farming? An integrated assessment of soil properties, soil ecosystem services, and socio-economic aspects

- Jan Peter Lesschen  
  Areas at risk of crop yield losses in Europe due to low or decreasing soil organic carbon levels
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<tr>
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<th>Speaker(s)</th>
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<tr>
<td>17.15 – 17.30</td>
<td>Hsiao-Hang Tao</td>
<td>Effects of long-term crop residue application on soil biota, soil aggregation and organic matter allocation in oil palm agroecosystems</td>
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<td>Oleg Makarov</td>
<td>Cost estimate of agricultural land degradation in Russia applying different methodological approaches</td>
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<td>17.30 – 17.45</td>
<td>Ludovic Henneron</td>
<td>Forest management adaptation to climate change: soil biodiversity and ecosystem functioning response to stand density reduction</td>
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<td>Jan van den Akker</td>
<td>How serious is subsoil compaction?</td>
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<td>17.45 – 18.00</td>
<td>Marcel van der Heijden</td>
<td>Soil biodiversity as a driver of ecosystem sustainability</td>
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<td>Wim de Vries</td>
<td>Impacts of revision of fertilizer policies on soil balances of copper, zinc, cadmium and lead in EU-27</td>
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<td>18.00 – 19.00</td>
<td>Snacks with refreshments and poster sessions – Restaurant 'The Spot', Orion building</td>
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Thursday, August 27th 2015

08.00  Arrival / Registration – Lobby, Orion Building
       Poster Placement, Coffee

THEME 5: LAND FUNCTIONS
Chair: Violette Geissen

08.30 – 08.55  KEYNOTE – Plenary meeting room (Orion 1040)
                Gerard Govers, KU Leuven, Belgium
                Developing new visions for soil conservation

08.55 - 09.20  KEYNOTE – Plenary meeting room (Orion 1040)
                Jetse Stoorvogel, Wageningen University, The Netherlands
                What is the window of opportunity for our soil functions? A global and
                historical perspective

09.20 – 10.00  Plenary discussion - (Orion 1040)

10.00 – 10.30  One minute poster pitches – Plenary meeting room (Orion 1040)

Presented posters:

Romain Armand: Using plant functional traits to improve the mitigation of
runoff-erosion efficiency of herbaceous hedges

Ayse Basbozkurt: Spatial analysis of soil ‘s some physical and chemical
properties in Southern Anatolia

Elena Bondarenko: Assessment of damage caused by land degradation at
the farm level in Moscow Region, Russia

Matthijs Bouwknegt: New developments in contaminated land management
in Vietnam

Khalil Ur Rahman Butt: Soil characteristics mapping is a pre-requisite to
conduct applied agricultural research and transfer of technologies to farmers

Mark Caulfield: Exploring Dominant Land Uses and their Associated Soil-
Based Agroecosystems in a Heterogeneous Agricultural Landscape in the
Ecuadorian Andes

Mark Caulfield: Exploring the Inter-Relationship between Landscape
Heterogeneity and Within Farm Variability in Resource Allocation in the
Andes

Vanessa Cristina de Carvalho Oliveira: Soil functionality indicators and
multifunction assessment of Cerrado – Brazil

Majid Dowlati: Remote Sensing of Burned Residue in Fields using Landsat -8
Sensor Imagery

Mohammadreza Hosseini: Effect of fire frequency on nutrient losses in
burned Pine forest of North-Central Portugal
Sergiy Kolomiets: Dynamic model of soul functioning and development

Adam Lajczak: Anthropogenic changes in relief of raised bogs in the Polish Carpathians

Stanislav Maly: Validation of models describing relationships between microbial soil properties and characteristics of stands in Coniferous and Deciduous forests

Elly Morriën: Natural and induced supressiveness of Globodera Rostochiensis by Pochonia Chlamydosporia on a chronosequence of abandoned agricultural soils

Joao Pedro Nunes: Comparing erosion rates in terraced agriculture fields and fire-disturbed forests in a humid Mediterranean mountain catchment

Taco Regensburg: The role of vegetation patches and soil moisture conditions in runoff and erosion connectivity in a 4 times burnt pine stand

Pim Rijkkee: Low-Land Gully Formation in the Amhara Region, Ethiopia

Andrea Román Sánchez: Single-grain OSL and IRSL dating for reconstruction of soil forming processes in a hillslope catena in Sierra Morena, S Spain

Jeroen Schoorl: Soil redistribution and landscape evolution modelling: LAPSUS

Hanar Siam: Evaluation of methods application for urea fertilizer by compost addition and its effect on peanut productivity, mineral content and quality under the newly reclaimed saline soil

Vera Silva: Pesticide distribution in European soils resulting from decades of application and related risk for the environment

Alexey Sorokin: Economics of land degradation and improvement: challenges for regional-scale assessments

Jaime Villacis: Performance of forest species on substrates derived from disturbed soils due to Petroleum activity in the Ecuadorian Amazon

Henk Wösten: Soil map providing basic information for crop and site specific water and fertility recommendations in Ethiopia

Irena Ymeti: Monitoring soil strength dynamics at plot scale using image texture analysis

10.30 – 11.00 Poster session with coffee break – Restaurant 'The Spot', Orion building
11.00 – 12.30 PARALLEL SESSION

2 sessions with 6 oral presentations

**Session Climate Change 1 (Orion 1040)**
Chair: Boris Jansen

11.00 – 11.15
Juliane Filser
Soil fauna: key to soil organic matter dynamics and modelling

11.15 – 11.30
Edward Gregorich
Plant residue decay in diverse Canadian soils

11.30 – 11.45
Jan Willem van Groenigen
Does the effect of earthworms on the soil greenhouse gas balance differ between farming systems?

**Session 5.2: Land Functions 2 (Orion 2051)**
Chair: Violette Geissen

11.00 – 11.15
Julian Campo
Soil aggregation and soil organic carbon redistribution in a Mediterranean hill-slope affected by forest fires, erosion and deposition

11.15 – 11.30
Clovis Grinand
Mapping temporal change of soil organic carbon: Impacts of deforestation in tropical humid and dry soil-landscape

11.30 – 11.45
Adam Lajczak
Factors of abiotic environment influencing distribution and growth of peat bogs in Flysch Mountains, as exemplified by the Polish Carpathians

11.45 – 12.00
Ingrid Lubbers
Exploring the relationship between soil mesofauna, soil structure and N2O emissions

12.00 – 12.15
Kees Jan van Groenigen
Application of a two-pool model to ecosystem carbon dynamics under global change

12.15 – 12.30
Liz Veerman
Use of lipid biomarkers to trace the source of soil organic carbon in afforested soils across Europe

12.30 – 14.00 Lunch and poster sessions – Restaurant ‘The Spot’, Orion building
THEME 6: CLIMATE CHANGE
Chair: Karsten Kalbitz

14.00 – 14.25 **KEYNOTE** – Plenary meeting room (Orion 1040)
Ingrid Kögel-Knabner, Chair of Soil Science, Technische Universität München, Germany
Understanding organic matter sequestration for sustainable management of soils

14.25 – 14.50 **KEYNOTE** – Plenary meeting room (Orion 1040)
Pete Smith, Institute of Biological and Environmental Sciences, University of Aberdeen, United Kingdom
Soils and climate Change

14.50 – 15.30 Plenary discussion - (Orion 1040)

15.30 – 16.00 One minute poster pitches – Plenary meeting room (Orion 1040)
Presented posters:

*Adoum Abdraman Abgassi:* Carbon stocks in polders soils developed in inter Dunes landscapes under semi-arid climate (Lake Chad)

*Amira Aschi:* Effects of faba bean position in rotation system on abundance and diversity of soil microorganisms and nitrogen availability

*Padraig Flattery:* Estimating Soil Carbon: Exploring Methodologies

*Hala Kandil:* Role of cobalt in wheat water relationships under two different moisture regimes

*Boris Jansen:* The use of biomarkers to trace carbon transformations and input in soils

*Miriam Muñoz-Rojas:* Soil respiration in biodiverse semi arid ecosystems: effects of vegetation type and seasonal variation

*Estela Nadal-Romero:* The effects of land use changes on soil carbon stocks

*Nuria Valbuena:* The effect of mole drainage on N2O emissions from a clay-loam soil under grassland

16.00 – 16.30 Poster session with coffee break – Restaurant ‘The Spot’, Orion building
PARALLEL SESSIONS

2 sessions with 6 oral presentations

16.30 – 16.45 Estela Nadal-Romero
How do soil properties change after land abandonment in Mediterranean areas?

16.30 – 17.00 Ni’matul Khasanah
Carbon neutral? Changes in mineral soil carbon stock under oil palm plantations derived from forest or non-forest in Indonesia

16.45 – 17.00 Andrea Román Sánchez
Mediterranean landscape dynamics: soil formation processes long term

16.45 – 17.00 Gillian Kopittke
On the Rise and Fall of Carbon Balances in a Managed Heathland

17.00 – 17.15 Jeroen Schoorl
Resolution effects on feedbacks between soil redistribution and land use change in the Guadalhorce Valley, Alora, Spain

17.00 – 17.15 Albert Tietema
A 15N tracer experiment shows long-term stabilization of N deposition in organo-mineral complexes in the mineral soil of a forest ecosystem: consequences for C sequestration

17.15 – 17.30 Arnaud Temme
LORICA: a new soil landscape co-evolution framework

17.15 – 17.30 Jerome Ebagnerin Tondoh
Assessing the potential of soils for climate change mitigation and adaptation in West African drylands

17.30 – 17.45 Marcos Angelini
Digital soil mapping of an Argentinian Pampa Region using structural equation modelling

17.30 – 17.45 Jan van den Akker
Subsidence and CO2 emissions of peat soils in agricultural use

17.45 – 18.00 Oren Hoffman
Experimental and natural changes in semi-arid vegetation patterns affect runoff production and shrub-herb interactions

17.45 – 18.00 Juniarti Yuni
Soil carbon stock in sub-optimal land due to climate change on development Cymbopogon nardus L. Simawang Village, West Sumatra, Indonesia

18.00 – 19.00 Restaurant ‘The Spot’, Orion building
Conference closure - Jakob Wallinga, chair
Snacks with refreshments and poster sessions
Practical Information

Conference Venue
Orion Building, Wageningen Campus
Address: Bronland 1, Building 103
6708 WH WAGENINGEN
Tel. +31 (0) 317 48 87 77 -Orion Reception desk

Travel to Wageningen Campus
If you travel by car there is a large parking area (free parking) behind the Orion building. There is also a regular bus service from Wageningen bus station and the train station Ede-Wageningen (bus nr. 88 - 'Valleilijn' and bus nr. 84). Bus nr. 84 has a bus stop opposite the Forum building, next to Orion.

Bus service from Wageningen City Centre Hotels to the Orion Building
A shuttle bus service leaves each morning from the Wageningen City Centre Hotels, Hotel de Wageningsche Berg and Hotel de Hof van Wageningen to the Wageningen Campus. A return shuttle bus service after the conference is also available. See our bus schedule on the next page.
For the Excursions on Tuesday, 25th of August, buses will leave at the parking of Hotel de Hof van Wageningen and make a stop at Hotel De Wageningsche Berg.

Poster placement
You are welcome to place your poster the morning of your session at the poster session location (Restaurant The Spot); please remember to remove it at the end of the day to make the space available for next days’ posters.

WiFi at Orion
There is free WiFi available during the Conference. The wi-fi codes are available at the registration desk and are strictly for Wageningen Soil Conference–participants.
Please be aware that the network regulations for working on the Wageningen UR network are applicable. If anyone using the WSC 2015 WiFi-codes causes security issues on the Wageningen UR network unfortunately the WiFi option will be closed to all participants.

Conference Secretariat during the Conference
Mrs Hedy Wessels Tel. +31 (0) 317-485 309 or +31 (0)6-12 385 733

Emergencies Orion
In case of medical and other emergencies, please call the Orion emergency telephone number: Tel. +31 (0) 317 484 444

Disclaimer
All best endeavours will be made to present the Wageningen Soil Conference 2015 programme as published. However, the Wageningen Soil Conference reserves the right to alter or cancel without prior notice, any of the arrangements, timetables, plans or other items relating directly or indirectly to the programme for any reason beyond its reasonable control. Wageningen UR is not liable for any inconvenience caused as a result of such alteration. Please be aware that participants take part at their own risk. Wageningen UR will not be responsible for personal injury or loss or damage of property.
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