

Jens Leifeld – Curriculum Vitae

Personal information

Jens Leifeld, PD Dr.

Agroscope, Research Division Agriculture and Environment, Climate and Agriculture Group
Reckenholzstrasse 191; CH-8046 Zurich. *e-mail: jens.leifeld@agroscope.admin.ch*

[Researcher profile](#)

Employment history

Since 10/2017

Head, Climate and Agriculture Group, Agroscope, Zurich

01/2002 – 09/2017

Team Leader CO₂ Sources and Sinks in agricultural soils, Agroscope, Climate / Air Pollution Group, Zurich.

06/2000 – 12/2001

PostDoc, Federal Research Institute for Environment and Agriculture, IUL/FAL Bern

01/1999 – 05/2000

PostDoc, Department for Soil Science, Technische Universität München

08/1998 – 12/1998

Research Associate, Department for Soil Science, Technische Universität München, Germany

08/1994 – 07/1998

Doctoral student, Soil Science Group at Institute for Physical Geography, Ruhr-Universität Bochum, Germany

Education

- 2007: Habilitation at the Institute of Environmental Geosciences, Universität Basel, Switzerland (venia docendi Soil Science).
- 1998: Dr. rer. nat. (PhD) in Soil Science, Ruhr-Universität Bochum, Germany.
- 1994: Diplom (MSc.) Geography (studies of Physical Geography [major], Geoecology, Soil Science, Geology [minors], Ruhr-Universität Bochum, 1986-1994).

Teaching

Since 2008, Universität Basel: Lecturer (Privatdozent) at the Institute of Environmental Geosciences (annual full semester lecture 'Soil science: Carbon dynamics and global change' for MSc. students).

Approved research projects

- 2022. 'Biodiversität, Klima und Nachhaltigkeit: ein Umweltrechner für die Schweizer Landwirtschaft', funded by Minerva-Stiftung, CHF 225'000, J. Leifeld, S. Keel.
- 2021. 'Soil organic carbon sequestration potential of agricultural soils in Europe' WP III, funded by the European Joint Program Cofund on Agricultural Soil Management (EJP Soil), € 176'000, J. Leifeld.
- 2021. 'Indicators for successful carbon sequestration and greenhouse gas mitigation by rewetting cultivated peat soils' WP III, funded by the European Joint Program Cofund on Agricultural Soil Management (EJP Soil), € 122'000, J. Leifeld.
- 2020. 'Combining biogeochemical and modelling approach to assess peatland restoration', extension, funded by the Swiss National Science Foundation, CHF 139'000, J. Leifeld, C. Alewell.
- 2019. 'Prozessorientierte Modellierung der direkten N₂O-Emissionen landwirtschaftlicher Böden', funded by the Swiss Federal Office for the Environment, CHF 300'000. S. Keel, J. Leifeld.
- 2018. 'Lachgasemissionen aus überschütteten organischen Böden', funded by the Swiss Federal Office for the Environment, CHF 40'000. J. Leifeld.
- 2017. 'Klimawirksamkeit von Überschüttungen organischer Böden', funded by the Swiss Federal Office for the Environment, CHF 187'000. J. Leifeld, C. Alewell.
- 2017. 'AgroCO₂cept Flaachtal', funded by the Swiss Federal Office for Agriculture, CHF 70'000, J. Leifeld, H.-R. Oberholzer.
- 2016. 'Combining biogeochemical and modelling approach to assess peatland restoration', funded by the Swiss National Science Foundation, CHF 432'000, C. Alewell, J. Leifeld.
- 2014. 'Stable carbon isotopes in soils as indicators of environmental change', funded by the Swiss National Science Foundation, CHF 67'000. C. Alewell, J. Leifeld.
- 2014. 'Quantifying greenhouse gas mitigation effectiveness through the GRA croplands greenhouse gas network (MAGGnet) FACCE-JPI', funded by the Swiss National Science Foundation, CHF 36'000. J. Leifeld.
- 2014. 'Peatlands and climate', funded by the Swiss Federal Office for the Environment, CHF 230'000. J. Leifeld, C. Alewell.
- 2013. 'Agricultural management and belowground carbon inputs – sustaining soil quality', funded by the Swiss National Science Foundation, CHF 575'000. J. Mayer, J. Leifeld, A. Hund, S. Abiven.
- 2013. 'Sustainable management of organic soils', funded by the Swiss National Science Foundation, CHF 475'000. J. Leifeld, S. Engel, M. Müller.
- 2012. 'Land-use and management impacts on carbon sequestration in mountain ecosystems' funded by the Swiss National Science Foundation, CHF 286'000. J. Leifeld, M. Zhyanski.
- 2012. 'Soil isotope dating of the ZOFÉ long-term experiment' funded by the Swiss Federal Office for the Environment, CHF 15'000. J. Leifeld.
- 2012. 'GHG emissions and crop yields from biochar-amended temperate agricultural soils' funded by the Swiss National Science Foundation, CHF 190'000. J. Leifeld, F. Conen, A. Neftel.
- 2012. 'The effect of biochar application on nitrous oxide and carbon dioxide emission from an agricultural soil with a long history of different management', International Short Visit Programme, funded by the Swiss National Science Foundation, CHF 10'000. J. Leifeld, N. Buchkina.

- 2012. 'Stable carbon isotopes in soils as indicators of environmental change', funded by the Swiss National Science Foundation, CHF 220'000. C. Alewell, J. Leifeld.
- 2011. 'Area and location of organic soils in Switzerland' funded by the Swiss Federal Office for the Environment, CHF 150'000. J. Leifeld, A. Grünig.
- 2009. 'Land-use effects on organic matter in subalpine soils' funded by the Swiss Federal Office for the Environment, CHF 66'000. J. Leifeld.
- 2008. 'Turnover and stabilization of soil organic matter in high elevation grasslands' funded by the Swiss State Secretariat for Education and Research, CHF 100'000. J. Leifeld.
- 2007. 'Labile carbon in soils of alpine grasslands' funded by the Swiss National Science Foundation, CHF 162'000. J. Leifeld.
- 2006. 'Swiss greenhouse gas inventory agriculture' funded by the Swiss Federal Office for the Environment, CHF 141'000. J. Leifeld, J. Fuhrer.
- 2004. 'Soil carbon sequestration potentials in agricultural soils' funded by Swiss Federal Office for the Environment, CHF 150'000. J. Leifeld, J. Fuhrer.
- 2000. EU-Project FORCAST 'C- and N pools in forest soils'; € 60'000. I. Kögel-Knabner, J. Leifeld.
- 2000. Travel Grant DAAD Germany for scientific exchange TU Munich – University Porto Alegre, Brazil, € 10'000. J. Leifeld, H. Knicker.
- 1997. 'Humification of compost after application to soils' funded by the German Federal Ministry for Research and Education, € 40'000. J. Leifeld, S. Siebert, I. Kögel-Knabner.
- 1993. 'Ecological and economic evaluation of the municipal compost facility'; Research Grant Stadt Witten, € 10'000. J. Leifeld, D. Rohde, T. Held.

Memberships in panels and boards and editorial work

Since 2022. Member scientific advisory board "Dutch national research program on greenhouse gas emissions from peat meadows", Ministry of Agriculture, Nature and Food Quality.

Since 2022. Member scientific advisory board "Establishment of a German peatland monitoring programme for climate protection", Thünen Institut für Agrarklimaschutz.

Since 2018. Member scientific international committee SOERE ACBB, INRAE, France.

2017 – 2019. Member Associated Sub-committee of the Research Commission of the ETH Zürich, World Food System Grants.

2014. Guest Editor SI 'Environmental benefits and risks of biochar application', Agriculture, Ecosystems and Environment (eds. S. Saggar, M. Camps, J. Leifeld).

2013. Review Editor IPCC Wetland Supplement, chapter 'Rewetting and restoration of peatlands'.

2012 – 2015. Swiss Delegate and MC member COST Action TD 1107 'Biochar as option for sustainable resource management'.

Since 2011. Swiss Contact Point to the Global Research Alliance on Agricultural Greenhouse Gases, Cropland Group.

2011. Guest Editor SI 'Understanding the impacts of hydrological changes on terrestrial ecosystems: results from water manipulation experiments across different biomes', Biogeosciences (eds. P. Stoy, R. Ceulemans, D. Zona, J. Leifeld).

2007 – 2012. Associate Editor 'Biogeosciences'.

2007 – 2011. Coordinator Working Group 2 ('Agriculture and Forestry') COST Action 639 'Greenhouse gas budget of soils under changing climate and land use'.

2006 – 2010. Reviewer for the Climate Convention (UNFCCC; Clean Development Mechanism Projects Agriculture) and for the IPCC 2006 Guidelines for National GHG Inventories.

2005 – 2021. Editorial advisory board member 'Agriculture, Ecosystems and Environment'.

2003 – 2004. Swiss Delegate to EU (Thematic Strategy Soil Protection).

2003. Swiss Delegate to OECD (Development of Soil Indicators).

Review of research proposals

Biotechnology and Biological Sciences Research Council UK, 2020

Estonian Research Council, 2020

Natural Environment Research Council UK, 2014, 2019

Netherlands Organization for Scientific Research, 2015, 2017

National Science Foundation USA, 2010, 2015

Swiss National Science Foundation, 2014

Deutsche Forschungsgemeinschaft, 2011

EU FP7 - Distributed Infrastructure for Experimentation in Ecosystem Research, 2011

Polish Ministry of Science and Higher Education, 2011

Research Foundation Flanders, 2008

Canadian Foundation for Climate and Atmospheric Sciences, 2004

Grant Agency of the Czech Republic, 2002

Organisation of conferences

Convener 'Towards sustainable use of organic soils', Eurosoil 2021, online.

Member Scientific Committee '8th. international symposium on interactions of soil minerals with organic components and microorganisms' (ISMOM), 2019, E-Sevilla.

Convener 'Environment-friendly management of organic soils and paludiculture - from innovation to implementation', EGU, 2018, A-Vienna.

Member Scientific Committee '5. Agroscope Nachhaltigkeitstagung', 2018, CH-Zurich.

Convener 'Soil organic matter under human pressure - from process understanding to national inventories', EGU, 2016, A-Vienna.

Convener 'Round Table on Rewetting of Organic Soils', Swiss Federal Agency of the Environment, 2015, CH-Bern.

Convener 'The International Year of Soils: open session on soil security', Swiss Geoscience Meeting, 2015, CH-Basel.

Convener 'Land use and land management impacts on soil organic carbon: From process understanding to soil management', EGU, 2015, A-Vienna.

Member Scientific Committee annual meeting Swiss Soil Science Society, 2015, CH-Basel.

Member Scientific Committee 'Sixth International Workshop on Soil and Sedimentary Organic Matter Stabilization and Destabilization (SOM6)', 2014, USA-Kiawah Island.

Convener 'National Research Programme NRP 68: Research for improving soil knowledge and for sustainable use of soils', 12th. Swiss Geoscience Meeting, 2014, CH-Fribourg.

Convener 'Land use change and land management impacts on soil organic carbon: From process understanding to regional assessments' EGU, 2014, A-Vienna.

Member Scientific Committee annual meeting Swiss Soil Science Society 'Kohlenstoff im Boden', 2013, CH-Zurich.

Convener 'Land use change and land management impacts on soil organic carbon: From process understanding to regional assessments', EGU, 2013, A-Vienna.

Member Organizing Committee 'SOM 2012 – Unifying concepts of organic matter (de-) stabilization in terrestrial and aquatic systems', CH-Ascona.

Convener 'Impact of climate change on soil biochemical activity and soil respiration', Eurosoil 2012, I-Bari.

Convener 'Land use and land management impacts on soil organic carbon dynamics: from the long term experiment to the national inventory' EGU, 2012, A-Vienna

Convener 'Soil organic carbon dynamics at different spatial scales' EGU, 2011, A-Vienna.

Convener 'Soil organic carbon dynamics at the regional scale' EGU, 2010, A-Vienna.

Oral Presentations

Leifeld. *Kohlenstoffzertifizierung – wie umgehen mit reversiblen Senken? Ein methodischer Ansatz über ihre Klimawirksamkeit.* **Invited**, Tagung 'Carbon farming' der DAFA-Plattform Landwirtschaft im Klimawandel 2022, online.

Leifeld. *Soil carbon sequestration as negative emission technology – Where do we stand?* **Invited**, Swiss National GAW/GCOS Symposium 2021, CH-Bern.

Leifeld. *Klimawandel und die Rolle der Landwirtschaft als Quelle und Senke von Treibhausgasen.* **Invited**, Quo Vadis-Tag 2021. Zukunft der Landwirtschaft – Landwirtschaft mit Zukunft. Spectrum Value Management 2021, CH-Dürnten.

Leifeld. *Pflanzenkohle – Ihre Anwendung in Böden aus Sicht des Klimaschutzes.* Agridea-Tagung 'Humus als Chance' 2020, CH-Olten.

Leifeld. *4 per 1000 – why Peatlands deserve special attention.* **Invited key note**, Food security and climate change: 4 per 1000 initiative new tangible global challenges for the soil 2019, F-Poitiers.

Leifeld, Alewell, Paul. *C4-accumulation by Miscanthus increases with soil organic carbon content.* 8th. international symposium on interactions of soil minerals with organic components and microorganisms ISMOM 2019, E-Sevilla.

Leifeld. *Klimaschutz durch Moorschutz?!* **Invited**, Kolloquium des Amtes für Landschaft und Natur Kt. Zürich 2019, CH-Zurich.

Leifeld, Wüst-Galley. *Treibhausgasemissionen aus degradierten organischen Böden 1850 – 2100.* **Invited**, "Vom 'eroberten Land' zum Renaturierungsprojekt - Geschichte der Feuchtgebiete in der Schweiz seit 1700" 2019. Eidg. Forschungsanstalt für Wald, Schnee und Landschaft, CH-Birmensdorf.

Leifeld. *Global peatlands in the light of the Paris Agreement and the 4 % Initiative – Do they play a Role?* **Invited key note**, 50th IPS Anniversary Jubilee Symposium: Peatlands: past, present and future 2018, NL-Rotterdam.

Leifeld, Menichetti. *The weight of peatland conservation and restoration in the global cycle of C and N.* EGU 2018, A-Vienna.

Leifeld, Weisskopf. *Sind fruchtbare Landwirtschaftsböden multifunktional?* 5. Agroscope Nachhaltigkeitstagung 2018, CH-Zurich.

Leifeld, Huguenin-Elie, Stampfli, Zeiter. *Does management intensity control soil carbon storage in perennial meadows? - Results from three controlled long-term field experiments.* EGU 2018, A-Vienna.

Leifeld, Bader, Müller, Schulin. *Decomposition of old peat and young organic matter in degrading organic soils of different land use.* 6th International Symposium on Soil Organic Matter 2017, UK-Harpenden.

Leifeld. *Möglichkeiten klimaschonender Landwirtschaft durch Bodenkohlenstoff (?) Invited*, Workshop der Zurich Carbon Market Association 2017, CH Zurich.

Leifeld, Bader, Bretscher, Wüst, Müller. *Carbon and nitrogen in managed organic soils in Switzerland – indications for soil degradation and implications for N₂O emissions at national scale*. Jahrestagung der Schweizerischen Bodenkundlichen Gesellschaft 2017, CH-Bern.

Leifeld. *Der Bodenkohlenstoff in Landwirtschaftsböden – sind Böden ‘climate smart’?* Tagung Landbewirtschaftung und Humushaushalt 2017, CH-Zurich.

Leifeld. *Sources of variability in peat composition and the role of peat age*. EGU 2016, A-Vienna.

Leifeld. *The underappreciated role of organic soils in the terrestrial C and N cycle. Invited key note*, Jahrestagung der Schweizerischen Bodenkundlichen Gesellschaft 2016, CH-Genf.

Leifeld. *Separation of old black carbon in soil by thermal methods? A discussion. Invited*, ETH Ion Beam Physics 2015, CH-Zurich.

Leifeld. *Carbon decline in managed peatlands - local and global significance. Invited*, Mini Symposium Soil Science Universität Bern 2014, CH-Bern.

Leifeld. *Application of radiocarbon in soil C studies beyond the bomb peak. Invited key note*, Radiocarbon in the Environment Conference 2014, UK-Belfast.

Leifeld, Heiling, Hajdas. *Age and thermal stability of particulate organic matter fractions indicate the presence of black carbon in soil*. EGU 2014, A-Vienna.

Leifeld, Conen, Oberholzer, Mayer. *SOC in top- and subsoil of a 60-years agricultural field trial - indications for compensating effects of carbon input and turnover*. EGU 2014, A-Vienna.

Leifeld. *Fruchtbarer Boden und Landwirtschaft - Grundlagen unserer Zivilisation. Invited*, Regionaler Naturpark Schaffhausen und Bildungswerk Jestetten 2014, D-Jestetten.

Leifeld, Ammann, Neftel, Feng, Fuhrer. *A decade of continuous greenhouse gas exchange measurements and soil carbon monitoring at two temperate grassland sites*. ASA, CCA, & SSSA International Annual Meeting 2013, USA-Tampa.

Leifeld. *Land-use and management impacts on C sequestration in mountain ecosystems*. Bulgarian Academy of Sciences, 2013, BG-Sofia.

Leifeld. *Carbon losses from drained peatland soils. Invited*, Estimating soil carbon stocks and associated uncertainties at field, regional and national scales, ETH Zürich 2013, CH-Zurich.

Leifeld, Hilber, Bucheli, Schmidt. *Chemical and thermal properties of biochars – results from a screening of 58 samples*. COST biochar conference 2012, GR-Chania.

Leifeld, Fuhrer. *Low-input agriculture – GHG savings through soil carbon sequestration?* Eurosoil 2012, I-Bari.

Leifeld, Conen. *A simple approach to parameterize depth-dependent soil carbon stabilization*. Eurosoil 2012, I-Bari.

Leifeld. *Knowns, unknowns and other uncertainties in soil carbon sequestration studies. Invited*, Animal Change Annual Meeting 2012, UK-Edinburgh.

Leifeld. *Menge und Umsatz der organischen Substanz in landwirtschaftlichen Böden der Schweiz. Invited*, Zentrum für Agrarlandschaftsforschung 2011, D-Müncheberg.

Leifeld. *Soil organic matter dynamics in alpine grasslands. Invited*, University of Life Sciences 2011, N-Ås.

Leifeld. *Temperature dependency of heterotrophic soil respiration*. Universität Zürich 2011, CH-Zurich.

Leifeld. *Kohlenstoffsequestrierung in landwirtschaftlichen Böden – eine kritische Betrachtung. Invited*, KTBL Tagung Emissionen landwirtschaftlich genutzter Böden 2010, D-Bad Staffelstein.

Leifeld, Bassin, Hajdas, Conen, Fuhrer. *Soil and root carbon turnover along a pH gradient in subalpine grassland*. Organic matter dynamics and ecosystem functions 2010, F-Presqu'île de Giens.

Leifeld, Gubler, Grünig. *Organic matter loss from temperate ombrotrophic peatlands: An evaluation of the ash residue method*. EGU 2010, A-Vienna.

Leifeld. The response of soil organic matter to warming. **Invited**, Universität Bern 2010, CH-Bern.

Leifeld. *The organic fraction in soil. Current conceptions and challenges for research*. **Inaugural Lecture**, Universität Basel 2009, CH-Basel.

Leifeld. *Organic matter in cold and wet soils – anything different?* **Invited key note**, SOM conference 2009, USA-Colorado Springs.

Leifeld, Budge, Conen, Fuhrer. *Verteilung und Umsatzraten organischer Bodensubstanz in (sub)alpinen Grasslandböden*. Jahrestagung der Deutschen Bodenkundlichen Gesellschaft 2009, D-Bonn.

Leifeld. *Bodenkohlenstoff und Klimawandel*. **Invited**, Bodenschutz im Klimawandel 2009, D-Dresden.

Leifeld, Reiser, Oberholzer. *Soil organic matter dynamics in a long-term field experiment comparing conventional and organic farming. Evidence from fractionation and modelling*. Eurosoil 2008, A-Vienna.

Leifeld, Zimmermann, Conen, Fuhrer. *Verteilung und Umsatzraten organischer Bodensubstanz in (sub)alpinen Graslandböden*. Jahrestagung Deutsche Bodenkundliche Gesellschaft 2009, D-Bonn.

Leifeld. *Einfluss der Bewirtschaftung auf den Bodenkohlenstoff in der Landwirtschaft*. **Invited**, Humus in Böden 2008, D-Munich.

Leifeld. *Humus in Böden: Quelle oder Senke für CO₂ in einem wärmeren Klima?* Universität Basel 2008, CH-Basel.

Leifeld, Zimmermann, Conen, Fuhrer. *Storage and turnover of carbon in grassland soils along an elevation gradient in the Swiss Alps*. Swiss Geoscience Meeting 2007, CH-Geneva.

Leifeld. *Radiocarbon based SOC turnover estimates in soils containing black carbon*. Cost 639 meeting on soils and greenhouse gases 2007, E-Barcelona.

Leifeld. *Kohlenstoffpools in Böden – Modell und Messung*. **Invited**, Universität Innsbruck 2007, A-Innsbruck.

Leifeld, Zimmermann, Conen, Fuhrer. *Storage and turnover of organic matter along an elevation gradient in the Alps*. SOM Symposium 2007, F-Poitiers.

Leifeld, Franko, Schulz. *Validation of modelled SOC pools by DRIFT-PLS*. KOLI-meeting on soil carbon stocks 2006, FIN-Koli.

Leifeld, Fuhrer. *Long-term management effects on soil organic matter quality in two subalpine grasslands*. Swiss Geosciences Meeting 2005, CH-Zurich.

Leifeld, Zimmermann, Fuhrer. *Quantitative and qualitative information on soil organic matter revealed by spectroscopic methods*. COST 627 meeting on C storage in grasslands 2004, B-Gent.

Leifeld, Bassin, Fuhrer. *Kohlenstoffvorräte- und Bindungspotentiale in landwirtschaftlichen Böden der Schweiz*. Jahrestagung der Deutschen Bodenkundlichen Gesellschaft 2003, D-Frankfurt/Oder.

Leifeld, Fuhrer. *Temperature effects on CO₂ production and O₂ consumption of soils under controlled conditions*. ESF conference on carbon fluxes in terrestrial ecosystems 2003, D-Kiel.

Leifeld, Fuhrer. *Die Bedeutung der Landwirtschaft als C-Senke in der Schweiz*. Tagung Klimaschutz der Agentur erneuerbare Energien und Energieeffizienz in der Schweiz 2003, CH-Bern.

Leifeld, Bassin, Fuhrer. *Soil carbon stocks and sequestration potentials in Swiss agriculture*. OECD expert meeting on soil carbon 2002, CAN-Ottawa.

- Leifeld, Bassin, Fuhrer. *Kohlenstoffvorrat und Bindungspotential in landwirtschaftlichen Böden der Schweiz*. Jahrestagung der Schweizerischen Bodenkundlichen Gesellschaft 2002, CH-Basel.
- Leifeld, Calanca, Fuhrer. *Modellierung von Boden-C-Gehalten mit unterschiedlichen Temperaturfunktionen*. Jahrestagung der Deutschen Bodenkundlichen Gesellschaft 2001, A-Vienna.
- Leifeld, Calanca, Fuhrer. *Uncertainties in modelling temperature effects on soil organic carbon*. Cost 627 meeting on C storage in European grasslands 2001, DK-Viborg.
- Leifeld, Kögel-Knabner. *Carbon and nitrogen pools as indicators for soil quality in agricultural soils under different land-use*. Eurosoil 2000, UK-Reading.
- Leifeld, Knicker, Kögel-Knabner. *Soil organic matter quality in integrated and organic farming systems*. University of Porto Alegre 2000, BR-Porto Alegre.
- Leifeld, Siebert, Kögel-Knabner. *Mikrobielle Biomasse und spezifischer C-Umsatz in landwirtschaftlich genutzten Böden nach Kompostanwendung*. Jahrestagung der Deutschen Bodenkundlichen Gesellschaft 1999, D-Hannover.
- Leifeld, Siebert, Kögel-Knabner. *Effects of biowaste compost amendment on soil microbial biomass and specific carbon turnover in agricultural soils*. Orbit99 1999, D-Weimar.
- Leifeld, Siebert, Kögel-Knabner. *Soil organic matter sequestration in long term field experiments with compost amendment*. British Soil Science Society Autumn Meeting 1998, UK-Edinburgh.
- Leifeld, Siebert, Kögel-Knabner. *Einfluss der Anwendung von Bioabfallkomposten auf die Kohlenstoff- und Stickstofffraktionen in Böden - Teil 2: Kohlenstofffraktionen*. VDLUFA Kongress 1996, D-Giessen.