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Lancement en France du ‘Global Soil Biodiversity Atlas’

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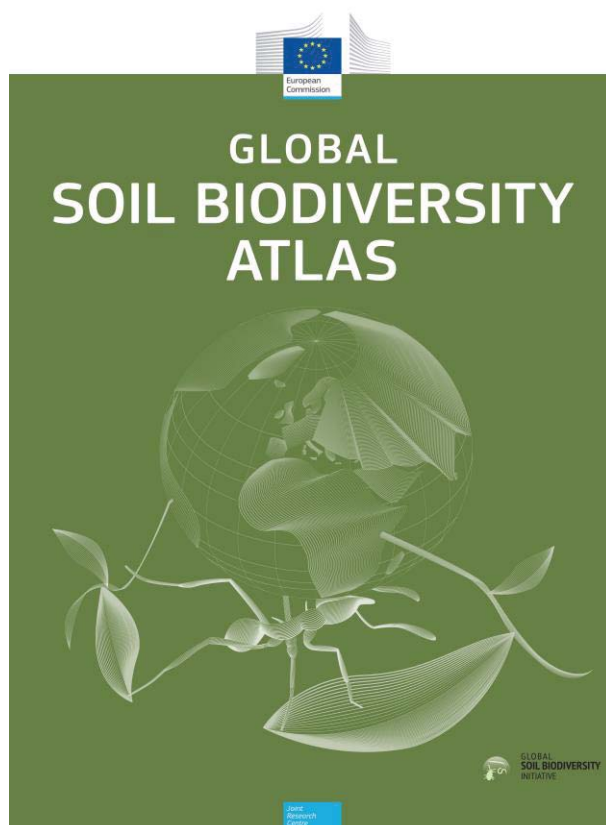
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**Symposium de l'Académie d'Agriculture de France
& de la Commission Européenne**

Lancement en France du 'Global Soil Biodiversity Atlas'

28 Novembre 2016 – 9h30 à 17h30

Organisateurs : Jean-Luc Chotte IRD
Philippe Lemanceau INRA (Académie d'Agriculture de France)
Alberto Orgiazzi JRC, Commission Européenne



Programme
Résumés et courtes biographies des intervenants

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Introduction du colloque

Jean-Luc CHOTTE is a senior scientist at IRD (Institut de Recherche pour le Développement), France. His research topic deals with the impact of climate and land use changes on soil organic matter dynamics (stocks and fluxes). As a soil ecologist, he has a special interest in the role of soil biota (macrofauna, mesofauna, microorganisms) and their interactions in organic carbon dynamics in soils. His research promotes the role of soil biota as key players in agro-ecosystem functioning and in soil and land rehabilitation. From 1996 to 2004 he was posted in Sénégal and conducted in depth field studies on means to enhance soil carbon stock in different agro-systems from semi arid to humid ecosystems. He has been involved in international projects. He co-chaired the 3rd International Scientific Conference on “Climate Smart Agriculture” (2015). To date he has published about 90 publications in the fields of Soil Sciences and Soil Ecology. Since 2011 he is the Director of joint Unit “Functional Ecology & biogeochemistry of soils & agro-ecosystems”. He is the focal point for IRD in the 4P1000 initiative. Since the last COP 12 of the UNCCD convention he is Vice-Chair of the Committee for Science and Technology of the convention and member of the Science and Policy Interface.

Recent papers

- Sall S. N., Ndour N. Y. B., Diedhiou-Sall S., Dick R., Chotte J.L. 2015. Microbial response to salinity stress in a tropical sandy soil amended with native shrub residues or inorganic fertilizer. *Journal of Environmental Management*, 161, 30-37. ISSN 0301-4797
- Herrmann L., Chotte J.L., Thuita M., Lesueur D. 2014. Effects of cropping systems, maize residues application and N fertilization on promiscuous soybean yields and diversity of native rhizobia in Central Kenya. *Pedobiologia*, 57, 75-85. ISSN 0031-4056
- Chotte J.L., Diouf M.N., Assigbetsé K., Lesueur D., Rabary. B., Sall S.N. 2013. Unexpected similar stability of soil microbial CO₂ respiration in 20-year manured and in unmanured tropical soils. *Environmental Chemistry Letter*, 11, 135–142. DOI 10.1007/s10311-012-0388-9
- Bernard L, Chapuis-Lardy L, Razafimbelo T, Razafindrakoto M, Pablo A, Legname E, Poulain J, Bröls T, O'Donohue M, Brauman A, Chotte J.L., Blanchart E 2012 Endogeic earthworms shape bacterial functional communities and affect organic matter mineralization in a tropical soil. *ISME Journal*, 6, 213-222.

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Let's talk about the 1st ever Global Soil Biodiversity Atlas

Alberto's scientific interest is devoted to the fields of biology and biotechnology, with a particular interest in molecular biology and soil metagenomics. His PhD project was aimed at the analyses of soil biodiversity by means of next-generation sequencing technologies (metabarcoding-based approach). While doing his PhD, he spent time at AGROSCOPE (Zurich, Switzerland) and at the University Claude Bernard Lyon I (Lyon, France). Alberto completed his PhD cycle in 2012.

In 2013 he joined the European Commission's Joint Research Centre (JRC) as a post-doctoral researcher. His 3-years projects dealt with

- *the development of the first Global Soil Biodiversity Atlas in collaboration with the Global Soil Biodiversity Initiative (www.globalsoilbiodiversity.org) and*
- *the assessment and mapping of potential threats to soil biodiversity across Europe as part of the FP7 EU project EcoFINDERS.*

In May 2016 Alberto returned to the JRC as temporary scientific officer to work on

- *the assessment of soil biodiversity and the ecosystem services that it provides at European scale,*
- *the development of a European soil biodiversity database,*
- *the assessment of potential threats to soil biodiversity at global scale, and*
- *development of specific measures to protect soil organisms.*

Recent papers

- [Orgiazzi](#), et al. 2016. Global Soil Biodiversity Atlas. European Commission, Publications Office of the European Union, Luxembourg. 176 pp.
- [Orgiazzi](#) et al. 2016. A knowledge-based approach to estimating the magnitude and spatial patterns of potential threats to soil biodiversity. *Science of the Total Environment*, 545-546, 11-20.
- [Orgiazzi](#) et al. 2015. Soil biodiversity and DNA barcodes: opportunities and challenges. *Soil Biology and Biochemistry*, 80, 244-250.
- [Orgiazzi](#) et al. 2013. 454 Pyrosequencing analysis of fungal assemblages from geographically distant, disparate soils reveals spatial patterning and a core mycobiome, *Diversity*, 5, 73-98.
- [Orgiazzi](#) et al. 2012. Unravelling soil fungal communities from different Mediterranean land-use backgrounds. *PLOS ONE*, 7, e34847

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FP7 large scale European project EcoFINDERS

EcoFINDERS project aimed at providing scientific and technological knowledge on soil biodiversity and functioning in relation with ecosystem services to the European Commission for its Soil Thematic Strategy. Research conducted within EcoFINDERS project has: (i) significantly increased the knowledge of soil biodiversity and soil ecosystem services across Europe, (ii) delivered standardized operating procedures to assess soil biodiversity and services, (iii) proposed a set of cost-effective bioindicators and mapped the threats to soil biodiversity at the European scale, (iv) developed strategies for assessing the economic value of soil biodiversity and ecosystem services, and (v) promoted the importance of soil biodiversity and ecosystem services to policy-makers, stakeholders and public.

Philippe Lemanceau is a senior scientist at the French National Institute for Agricultural Research (INRA). He is a soil microbiologist with a widely recognized expertise in plant-microbe interactions. He has published more than 100 papers and 35 book chapters. He is heading a department on agroecology in Dijon aiming at developing sustainable cropping systems valorizing plant and microbial diversity in order to maintain a high agricultural production delivering at the same time ecosystem services, with a lower use of synthetic inputs. He has been coordinating a large scale program within the 7th framework-program EcoFINDERS aiming at providing the European Commission with information on (i) soil biodiversity across Europe and (ii) relations between biodiversity, functions and ecosystems services according to the variety of European environmental conditions (soil and climate types, land uses).

Recent papers

- Jones *et al.* 2014. Recently identified microbial guild mediates soil N₂O sink capacity. *Nature Climate Change*, 4, 801-805.
- Lemanceau *et al.* 2015. Understanding and managing soil biodiversity: a major challenge in agroecology. *Agronomy for Sustainable Development*, 35, 67-81.
- Lemanceau *et al.* 2016. Soil biodiversity and ecosystem functions across Europe: A transect covering variations in bio-geographical zones, land use and soil properties. *Applied Soil Ecology*, 97, 1-2.
- Philippot *et al.* 2013. Going back to the roots: the microbial ecology of the rhizosphere. *Nature Reviews Microbiology*, 11, 789-799.
- Ranjard *et al.* 2013. Turnover of soil bacterial diversity driven by wide-scale environmental heterogeneity. *Nature Communications*, 4, 1434.