

## Soil Biodiversity and Ecotoxicology

**CHAIRS: Rick Scroggins, Jörg Römbke**



Wednesday 14<sup>th</sup> May 2014, 08:10 – 16:00, room: Delhi

The huge diversity of soil organism communities (both micro-organisms and invertebrates) is still not legally covered by EU or national governments. According to the Soil Framework Directive (2006; still a draft) this situation is caused by the fact that “not enough is known about soil biodiversity”. However, in the last ten years various initiatives and projects (to name just a few: ENVASSO (FP6) or EcoFINDERS (FP7)) were performed or started in order to improve our knowledge on the diversity and functions (i.e. the ecosystem services) of soil organisms. In particular methodological improvements, such as the identification of organisms (e.g. DNA barcoding) or the standardisation of sampling methods (e.g. ISO 23611-1/6) helped to get a better overview on their numbers and diversity. While the testing of (very few) selected species of soil organisms or single activity parameters are an accepted part of the prospective risk assessment of chemicals (especially pesticides) and, in some countries, of the site-specific retrospective assessment of contaminated soils, the structural and/or functional biodiversity of soil organism communities in total is not (yet) evaluated. On a global level, the science of soil ecotoxicology is advancing steadily with application of standardized methods, development of new techniques involving single species and community level assays beyond agricultural settings and regulatory implementation of these methodologies in risk assessment and management of chemicals and mixed contamination at impacted sites. Traditional soil toxicity test methods have focused on techniques relevant to agricultural land, and test organisms that are commonly-used worldwide. This session aims for contributions in the following areas: 1) What is known about the “normal” properties of soil organism communities? How much do they differ in different regions or land use forms and which factors govern their occurrence or distribution? How could reference communities (i.e. communities which can be used as a yardstick for the assessment of impacted sites) look like? 2) What is known on the status of soil organism communities in Europe or other geographic regions? Besides chemical contaminants, other factors such as soil compaction or climate change can stress soil organism communities - but have examples been identified in the field? 3) Which consequences does a decline of soil biodiversity have on the ecosystem services provided by these microbes and invertebrates? 4) Are there examples from other parts of the world which could be extrapolated to the European situation and vice versa? 5) Look at emerging soil methods or endpoints. 6) Consider both contaminated soil and chemical testing in soil. 7) Identify research gaps in assessing contaminated soils. 8) Seek perspective from risk assessors to identify their current needs. 9) Explore how to shape novelty in design into ecological relevance. Case studies as well as methodological improvements could be presented in the proposed session.

**SESSION TYPE:** Platform and Poster

**ADVISORY GROUP:** Global Soils Advisory Group