Overview: biodiversity and anthropogenic (including chemical) stressors

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Soil ecotoxicology aims to detect, describe and assess the influence of stressors on the soil ecosystem. Historically, this was interpreted as measuring the acute or chronic effects of specific stressors, mainly pesticides, on a limited number of single species, mainly earthworms. Today, the aim is to protect the diversity and functions of the (whole) organism community. From a regulatory point of view the new approach has been described in the recent EFSA opinion (2017). Another aspect of this shift is the increasing focus on higher-tier (i.e. semi-field and field) tests, which is partly caused by the development of new methods such as the DNA-based identification of individual species. In parallel, modelling of highly complex soil organism communities, both with and without anthropogenic stressors, facilitated their use in regulatory assessment schemes. One recent example is their use in retrospective site-specific assessments (e.g. the TRIAD approach). So far, these developments strongly focus on temperate regions, but first reports from other regions such as the tropics have been published. Examples covering different stressors as well as different organisms will be given.