Geophysical Research Abstracts
Vol. 19, EGU2017-15080, 2017
EGU General Assembly 2017

Do current European policies support soil multifunctionality?

Katharina Helming (1), Nadia Glaesner (2), and Wim de Vries (3)

(1) Leibniz Centre for Agricultural Landscape Research, ZALF Germany (helming@zalf.de), (2) University of Copenhagen, Frederiksberg, Denmark , (3) Alterra, Wageningen University, Wageningen, The Netherlands wim.devries@wur.nl

Soils are multifunctional. Maximising one function, e.g. production of biomass, is often at the costs of the other functions, e.g. water purification, carbon sequestration, nutrient recycling, habitat provision. Sustainable soil management actually means the minimization of trade-offs between multiple soil functions. While Europe does not have a policy that explicitly focuses on soil functions, a number of policies exist in the agricultural, environmental and climate domains that may affect soil functions, in particular food production, water purification, climate change mitigation, biodiversity conservation. The objective of this study was to identify gaps and overlaps in existing EU legislation that is related to soil functions. We conducted a cross-policy analysis of 19 legislative policies at European level. Results revealed two key findings: (i) soil functions are addressed in existing legislation but with the approach to their conservation rather than their improvement. (ii) Different legislations addressed isolated soil functions but there is no policy in place that actually addressed the soil multifunctionality, which is the integrated balancing of the multitude of functions. Because soil degradation is ongoing in Europe, it raises the question whether existing legislation is sufficient for maintaining soil resources and achieving sustainable soil management. Addressing soil functions individually in various directives fails to account for the multifunctionality of soil. Here, research has a role to play to better reveal the interacting processes between soil functions and their sensitivity to soil management decisions and to translate such understanding into policy recommendation. We conclude the presentation with some insights into a research approach that integrates the soil systems into the socio-economic systems to improve the understanding of soil management pressures, soil functional reactions and their impacts on societal value systems, including resource efficiency, ecosystem services and intergenerational equity.