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Soil as Sustainable Resource for the Bioeconomy in Germany

Abstract:

Healthy soils are pivotal elements of many SDGs and societal challenges, including biomass production for food, feed, energy and fiber, climate change mitigation and adaptation, ecosystem services provision, and biodiversity conservation. Bioeconomy strategies aiming at replacing fossil fuel based production with biobased production aggravate the demand for soil born biomass. But how can this be achieved without compromising the other soil functions? These questions are addressed in the German research program BonaRes. The term is short for Soil as a sustainable resource for the bioeconomy. Its ultimate goal is to extend the scientific understanding of soil ecosystems and to improve the productivity of soils and other soil functions while developing new strategies for a sustainable use and management of soils. In this presentation I will outline a framework for systems knowledge for soil health and soil functions applied in BonaRes. I will present current and future challenges for soil management and outline emerging solutions that integrate technological (digitalisation) innovations with nature based solutions. I will point on knowledge gaps and open research questions. My presentation concludes with an overview on private and public governance mechanisms for soil improving management.

Further reading:

www.bonares.de

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CV

Prof. Dr. Katharina HELMING (female) is a soil scientist and agronomist. She leads the research group Impact Assessment and co-leads the research area Agricultural Landscape Systems at the Leibniz Centre for Agricultural Landscape Reseaerch (ZALF). She is professor for Sustainability

Assessment at the University for Sustainable Development Eberswalde, Germany (University of applied sciences). She has 30 years experience of research on agriculture, soil conservation and sustainable land use in Europe, USA, China and Central Asia. Her current research is about soil futures and societal aspects of soil management. Together with her group she conducts foresight and scenarios development of agricultural management, and participatory sustainability assessment of emerging soil management strategies. Katharina is member of the coordination team of the German BonaRes Centre for Soil Research. She is scientific coordinator of the H2020 CSA Project Soil Mission Support and of the FACCE JPI project MACSUR SciPol Pilot (Modelling European Agriculture with Climate Change for Food Security). Katharina has published more than 90 international scientific publications. Katharina has extensive experience in coordinating and participating in European research (FP6, FP7, H2020).