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### Symposium--Can Soil Taxonomy Contribute Toward a Sustainable Economy As a Carrier of Soil Information?



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Pedology has advanced in the last few decades through the application of spatial analysis and digital mapping. However, soil survey interpretations have not kept pace with these advances. This has been partly because soil survey interpretations have been historically general in nature. Compounding the problem, current efforts toward broadening assessments of soil health simplify soil classification amounting to a loss of soil information. This symposium aims at a new focus for soil survey interpretations: (i) soil contributions to multiple ecosystem services: (ii) systematic economic evaluations of soil potentials toward sustainable development, and (iii) soil taxonomy as useful carriers of information.

*Invited speaker:*

[Using Soil Types As Carriers of Dynamic SDG-Related Information Obtained By Modelling](#)

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*Abstract:*

Traditional soil surveys were accompanied by interpretations with a qualitative, empirical, and static character: soils have “moderate limitations for a given form of land use.”

This information has been valuable for broad land-use questions on a regional or national scale. UN-Sustainable Development Goals in 2015 and the EU-Green Deal in 2019 require multifunctional land use, where not only production of healthy food is important but where also the quality of ground- and surface-water is considered, as well as carbon capture for climate mitigation and biodiversity preservation. All these demands correspond with a series of soil functions and related soil ecosystem services – varying in space and time - to be provided to society. Obviously, the traditional interpretations of soil survey reports can't provide this type of information, but Soil Taxonomy can still be relevant in a modern context. A comprehensive systems analysis is needed, and soil-water-atmosphere-plant simulation models are essential to improve assessment of soil moisture regime and for developing alternative land-use options that satisfy the often-contrasting demands of the various ecosystem services (e.g., for provisioning and regulating). Examples will be shown where models express the effects of several forms of soil degradation: compaction, organic matter depletion and erosion, showing that different soil types show significantly different forms of behavior illustrating the potential of using soil types as “carriers” of essential information to define suitable management procedures resulting in sustainable development. Two special applications of the models that produce unique and essential results, are illustrated: (i) exploratory studies to assess the effects of climate change and (ii) the important effect of soil properties on the quality of wines. These examples show again that soil types are excellent “carriers” of modern soil information providing a refreshed image for Soil Taxonomy.

