SAVE THE DATE

The 4per1000 Initiative launched in 2015 reinforced the focus of agricultural management on soil organic carbon. Enhanced soil organic carbon stocks can help to **mitigate climate change** and make soils more resilient to climate change. Finally, a sustainable management of soil organic matter is the **key for a sustainable agriculture** with the aim of enhanced food security. However, soil carbon is variable in space due to multiple environmental drivers that influence soil carbon dynamics and stocks. Thus, site and farm specific options are required to enhance soil carbon. In addition, potential of soil carbon sequestration and optimized soil carbon contents are site dependent and soil carbon accumulation has to be closely linked to an efficient nutrient management. Soils are open systems and the **carbon input via biomass**, like crop residues, is the prerequisite to maintain or enhance soil carbon stocks. The transformation pathways of carbon-input to the soils to long-term stabilised carbon and its quantification is still insufficiently understood. Moreover, systematic and holistic approaches are required to understand agricultural and optimise **carbon fluxes beyond field scale**.

The conference aims at

- **i) to discuss and assess efficient management options of soil carbon sequestration in different regions and at different sites for European agriculture,**
- **ii) to identify research gaps on this topic and**
- **iii) to determine the potential of soil carbon sequestration in European agricultural systems based on a quantitative view on agricultural carbon fluxes at field to regional scale.**

One result of the conference shall be a strategy paper on research gaps in the field of agricultural soil carbon management in the light of the 4per1000 initiative.

Venue: Forum of the Thünen Institute, Braunschweig, Germany (www.thuenen.de/en/about-us/locations-and-how-to-find-us/how-to-find-braunschweig/)

29. May (12:00 h) – 30. May 2018 (14:00 h)

Chairs: Dr. Axel Don, Dr. Christopher Poeplau, Prof. Dr. Heinz Flessa (Thünen Institute of Climate-Smart Agriculture; www.thuenen.de/en/ak/) **in partnership with the 4per1000 initiative**

Conference language: English

Conference fees: 110,-€ (including conference dinner)

Conference topics:

1.) **Internal soil C cycling and C input to the soil** (crop rotations, Roots and crop residues)

Roots and crop residues are the key sources for the development of soil organic matter in agricultural soils comprising the majority of the carbon input to the soils. However, little is known how modern crop species and recent changes in crop rotations affect this C-input. Crops and grassland species with intensive and deep rooting systems may disproportional contribute to maintain and buildup soil carbon.

2.) **External C input to the soil** (organic amendments)

In Germany, only 60% of all croplands receive organic fertilisers even though organic amendments are important for nutrient supply and build-up of soil organic carbon. New types of organic amendments were developed during the last years, including biochar and carbonized composts, and their effects of soil carbon stocks and biogeochemical cycling are still unclear. However, organic amendments are external inputs to the soil and their fluxes need to be assessed at farm or regional scale for the net C sequestration effect.

3.) Carbon monitoring, modelling and farmer´s tools

Soil carbon management relies on methods to detect and monitor soil carbon contents and stocks changes. Thus, farmers need practicable tools that predict the current soil carbon content and possible changes under different management scenarios. These tools need to be based on soil carbon models in order to capture the complexity of soil carbon fluxes. New monitoring options rose with in situ measurements and remote sensing that allow a new dimension in monitoring and modelling soil carbon dynamics in agricultural systems.

All experimental and modelling studies related to soil organic carbon management in agriculture are welcome.

Abstract submission 10th February- 29th March 2018 (via www.som-management.org)

Conference website and registration at **www.som-management.org**