



Tropentag, September 15-17, 2021, hybrid conference

“Towards shifting paradigms in agriculture
for a healthy and sustainable future”

A Soil Health Learning Platform in Malawi

SIEGLINDE SNAPP¹, REGIS CHIKOWO^{2,1}, MATEETE BEKUNDA³

¹*Michigan State University, Plant Soil and Microbial Sciences, United States*

²*University of Zimbabwe, Zimbabwe*

³*International Institute of Tropical Agriculture (IITA), Tanzania*

Abstract

Agricultural development and sustainable soil management on smallholder farms is challenged by complexity, as well as high uncertainty and value conflicts. There is widespread interest in how local adaptation can address this challenge, through co-learning with farmers, hand-held sensors, and remote sensed data analytical approaches. We are testing approaches through a learning platform in Central Malawi <http://globalchangescience.org/estafricanode>. This was established in 2013 with soil scientists, agronomists, geographers and agricultural economists of national and international institutions of the Africa RISING partnership in Malawi, supported by IITA and USAID. Our soil learning platform involves annual monitoring of 1000s of fields, participatory action research on integrated nutrient management and sustainable intensification, carried out with hundreds of farmers. Malawi government has released technologies such as the doubled up legume rotation for soil rehabilitation, based on this research platform. Recent findings highlight the role of crop diversification, weeds and residues in soil carbon status, conditioned by soil texture. This talk will highlight the new decision guide that is being scaled out by Malawi extension using handheld sensors to characterise soil carbon and soil profiles. An on-going question being addressed is the ‘value add’ and scalability of locally specific adaptive management versus traditional fertiliser recommendations. Overall, this platform is an opportunity to test technologies and extension methods, and to develop practical ways to link science to local knowledge. We hope that you will consider joining this learning platform with farmers and extension systems in Malawi, to answer your soil and crop nutrient response questions under real world conditions for smallholders.

Keywords: Action research, agroecology, farmer participatory, soil health