



The relationship between soil management and the Sustainable Development Goals: the case of global banana production

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The Sustainable Development Goals (SDGs) are a good example of the increasing demand on our soil resources. Our soil resources play a central role in multiple SDGs while talking about poverty (SDG 1), food security (SDG 2), clean energy through biofuels (SDG 7), climate mitigation (SDG 13), and land degradation (SDG 15). This means that basic decisions on soil management are now placed in the context of multiple soil functions. A good example is the global production of bananas and plantains with a total harvested area of almost 10 million ha. While the export bananas played a central role in economic development, an even larger share of the production plays a role in food security. Nevertheless, the production is also criticized due the intensive use of agricultural chemicals (fertilizers and pesticides) and the risk of soil degradation in the monoculture plantations. Decisions on soil management are context specific and depending on the environment. In this study we will analyse and discuss three production environments from the Philippines, Uganda, and Costa Rica. The role of the SDGs in the regions is very different. Where SDG 1 and SDG15 play an important role in the Costa Rican situation, SDG 2 is more important in Uganda and the Philippines. Decisions on soil management strongly depend on the agro-ecology with the available technological packages. The technological packages include low external input farming, organic farming, precision agriculture, and so-called best management practices. While producers take decisions at the field and farm level, we are now increasingly forced for joined action at the regional level with the rapid spread of highly virulent crop diseases. The SDGs have major consequences for soil management but this study shows that, at the same time, they cannot be translated one-to-one to the farm level at which the management decisions are taken. Therefore, off-farm effects and externalities are often not considered in farm management except if they are explicitly being targeted by policies or other interventions. Specific attention is required to analyse the aggregated effect of soil management decisions at the regional level.