Farm management effects on soil carbon stocks

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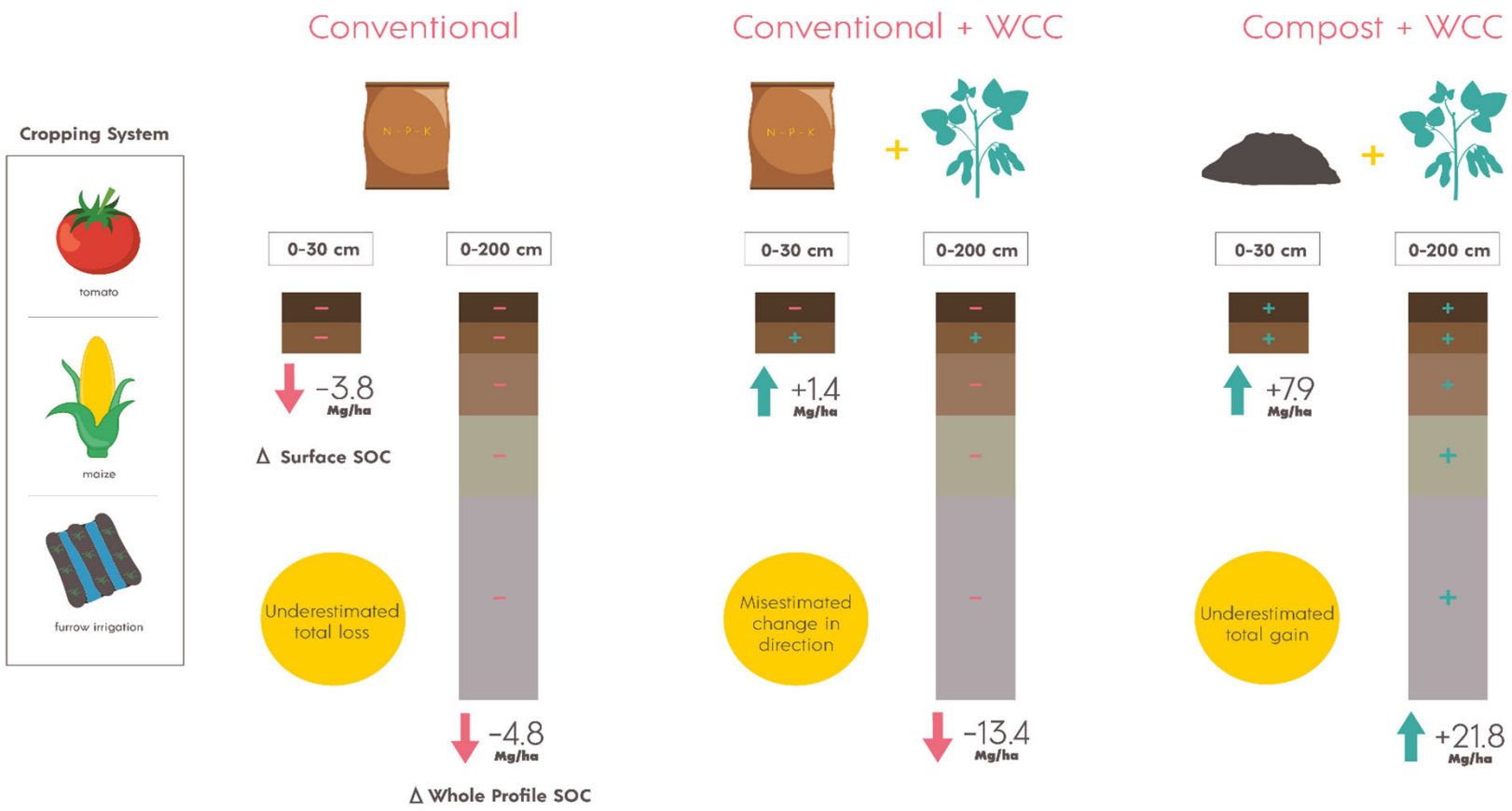
Managing for soil carbon

Cover cropping

Organic amendments

Sampling and monitoring

Surface vs. Deep Soil Inventories of Carbon Sequestration



KEY TAKEAWAYS:

- Organic management (cover crops + poultry manure compost) resulted in gains of soil carbon concentration, and gains in soil carbon stocks.
- Importantly, gains in the Organic cover crops + poultry manure compost system were observed deep in the soil profile, where soils are not disturbed by agricultural activities.
- Cover crops alone increased soil carbon concentrations only at the top foot of soil, and did not result in increases in carbon on a mass basis (soil C stocks).
- Current testing in most farms and studies focus on topsoil, and could lead to overestimation of carbon sequestration.
- Compost adds carbon along with other nutrients to the soil, which could increase soil carbon retention via microbes. Compost also increased carbon transport in water to the deep soil layers, indicating that water transfer of carbon down in soils is beneficial for storage.