

SOM and Soil Security

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Soil security is concerned with the maintenance and improvement of the global soil resource as it is connected to food security, water security, energy security, and planetary security (ecosystem services). Soil organic matter (SOM) is the basis for soil security. SOM directly impacts food security by providing nutrients for plant growth but also provides critical water supply during the growth season. SOM provides for the physical attributes of the soil environment thus allowing for better root development, infiltration of precipitation, and gas exchange. SOM provides the energy and nutrients for the biology in the soil. Soil security impacts water security by retention of water in soil and filtering contaminants in the water. SOM provides the filtering retention capacity. Soil security impacts energy security through production of energy crops, conservation of energy used for irrigation and tillage. At the planetary level, SOM provides for climate mitigation and biodiversity. Biodiversity of soil is often unappreciated for humanity. Soil health and human health goes beyond food security. Soil provides antibiotics, anti-cancer drugs, and many other drugs for human diseases. Given the importance of SOM to soil security, the maintenance and enhancement of SOM must be imbedded into land management strategies.