# Special Issue

# Advancing Soil Organic Carbon Stock Prediction with Digital Mapping

# Message from the Guest Editors

Soil Organic Carbon (SOC) plays a pivotal role in global climate regulation, soil fertility, and sustainable agriculture. As the largest terrestrial carbon pool, SOC is central to international climate goals and nature-based solutions. This Special Issue aims to gather cuttingedge research on innovative approaches for mapping and evaluating SOC stocks at multiple spatial and temporal scales. We welcome contributions that advance Digital Soil Mapping (DSM) techniques. integrate remote and proximal sensing data, and explore machine learning and deep learning applications in SOC prediction. Interdisciplinary studies that incorporate microbiology, spectroscopy, land use dynamics, and novel monitoring frameworks (e.g., MRV systems) are especially encouraged. We are particularly interested in studies addressing persistent challenges in SOC mapping, such as data scarcity, uncertainty quantification, harmonization across regions, and underrepresentation of vulnerable ecosystems. Contributions that propose scalable, transparent, and policy-relevant solutions are essential to support soilcentered climate actions and sustainable land use transitions.

#### **Guest Editors**

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