

Special Issue

Old Challenges and Modern Solutions in Farmland Soils: Addressing Heavy Metals, Microplastics, and GHG Emissions

Message from the Guest Editors

Significant metal (potential toxic element—PTE), microplastic and nano-plastic concentrations in soil are a widespread problem, especially in agricultural soil. PTEs and MNPs enter the soil and are persistent, and pollutants accumulate, having a wider impact on the ecosystem; biological uptake within the soil biome and into the food chain, as well as release into soil–water systems, provides a significant challenge for maintaining and exploiting soils for agriculture. Another urgent problem related to agricultural activity is the emissions of greenhouse gases (GHGs). Emissions due to agriculture activity are largely increasing due to the intensification of this activity and the abuse of fertilizers and pesticides for increasing crop yield. This Special Issue will depict efficient removal techniques for PTE- and MNP-enriched farmland, mostly in situ techniques grounded in nature-based solution principles to tackle different concentrations of contaminants in farmland soils. Farmland pollution by PTEs and MNPs is a monumental challenge, and nature-based solutions are fundamental for sustainable development, particularly for developing countries.

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