# Potential and limitations of sorbent amendments for increased micropollutant removal in the soil passage

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As the global demand for safe and clean water continues to rise, we face challenges associated with the depletion of freshwater resources due to overexploitation, contamination, insufficient wastewater treatment, and the climate crisis. Safeguarding and improving water quality is of seminal importance for societies and ecosystems worldwide. One technology to safeguard and increase clean water resources is the soil passage. Soil passage based technologies are dune infiltration (DI), managed aquifer recharge (MAR), and riverbank filtration (RBF). In all of these approaches, water is passed through natural soil or sediment layers for purification purposes. To increase pollutant removal in these natural systems, sorbent materials including carbon based sorbents and Iron oxides could increase sorptive removal and increase retention for potentially increased microbial degradation. This talk will explore the potential and limitations of such approaches to remove chemical pollutants from water. Therein, concepts of preferential sorption and strategies to increase degradation will be critically discussed, considering environmental factors and the range of chemical structures of organic micropollutants influencing these processes.

*Keywords: micropollutant, climate, soil passage*

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or European Research Executive Agency (REA). Neither the European Union nor the granting authority can be held responsible for them. Grant agreement No. 101059546.