

The research project focuses on the application of innovative washing solutions known as natural deep eutectic solvents (NDES) for the remediation of soils contaminated with heavy metals. Soil contamination with heavy metals poses a serious environmental problem, adversely affecting the natural ecosystem. Therefore, it is essential to determine the effectiveness of solutions that can be used for their removal to protect the environment. Previous studies have shown promising properties of NDES as potential agents for this purpose. The project will concentrate on the soil flushing process using these solutions, as well as a comprehensive assessment of soil properties after the completion of the process to thoroughly evaluate the quality of the remediated soil. The project's outcomes will contribute to the development of soil remediation systems tailored to real field conditions, aligning with the EU soil strategy. This strategy is an integral part of the broader EU Biodiversity Strategy for 2030, aiming to protect nature and reverse ecosystem degradation.

The objective of this project is to determine the efficiency of remediating soil contaminated with heavy metals (Cd, Cu, Hg, Ni, Pb, Zn) using NDES solutions and to compare the process's effectiveness with commercially available EDTA. The research will be conducted under both static and dynamic conditions.