

Restoring contaminated soil

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Credit: AI-generated image ([disclaimer](#))

Land contaminated with substances in or under the land can be potentially hazardous to health or the environment. However, in many cases there is minimal risk from living or working on contaminated ground and many sites have been successfully and safely redeveloped to provide high quality housing and working environments. However, in a few cases some sites are so contaminated they present a risk to human health or the environment. Exposure to contaminants can be through

inhalation of dust or gases, contact with soil, or through food grown on the land. Leachates (pollutants draining from the site in liquid form) can pollute groundwater and rivers or ponds.

Now Spanish researchers have developed an innovative concept to tackle this problem. The Sustainable Soil Upgrading by Developing Cost effective, Biogeochemical Remediation Approaches (UPSOIL) is a collaborative project carried out under the Seventh Framework Programme - Environment and [Climate Change](#) Theme. The project demonstrates an in-situ remediation through an innovative technological perspective, which takes into account the physical properties and the biogeochemical reactivity of the soil as well as the contaminants. Compared to conventional technologies, smart in situ approaches demonstrated significant potential to optimize the cleanup process. The merits of smart in-situ technologies have to be recognized by stakeholders to open new opportunities for improving remediation processes.

Now in its final stage, UPSOIL has developed a robust technology for fast, cost-effective, integrated source zone and plume treatment. These are designed to restore soil functions and associated risk levels, and maximise use of the natural soil rehabilitation potential for the long term. The project thus supports soil function preservation and faster restoration and sustainable redevelopment of European regions and cities that carry the burden of historical soil contamination.

UPSOIL approaches is widely accepted when sustainability, energy and cost efficiency issues are embedded in remediation decisions and recognised among all the actors taking part in site redevelopment. Moreover, potential for improving remediation practices can be fully explored when remediation is closely linked to urban planning and site revitalization.

Overall the project aimed at broadening the market of soil remediation for SMEs and to build confidence with regulators in adopting sustainable in-situ remediation as the preferable approach for [soil](#) restoration. The project has made it possible the making of external results exploitation plant which includes a patent application. This may be the solution to some 250 000 sites in Europe which is expected to grow according to various studies.

The project included fifteen partners with different profiles participated in the project: six R+D centres, one university , seven SMEs and a building contractor , all from ten different European countries geographically widely distributed.

More information: UPSOIL

www.upsoil.eu/

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