
**of the European Community for research, technological development and demonstration activities (2007-2013)**

## Collaborative Project

# *UMBRELLA*

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| Project title: | **Using MicroBes for the REgulation of heavy metaL mobiLity at ecosystem and landscape scAle: an integrative approach for soil remediation by geobiological processes** |
| Project number: | **226870** |
| Project coordinator: | **Universität Jena, Germany** |
| FZD participant: | **Institute of Radiochemistry** |
| Starting date: | **01.05.2009** |
| Duration (months): | **36** |


## Summary

The overall goal of UMBRELLA is to use microorganisms to develop cost-efficient and sustainable measures for soil remediation at heavy metal contaminated sites throughout Europe. This will be facilitated by research in microbiology, plant uptake and (hydro)geochemistry centers on the study of microbial influence on metal biogeochemical cycles and their impact for use in soil and water protection.
The technologies developed provide a speed-up of existing bioremediation techniques and will provide a tool-box to end-users with microbes for remediation actions in different European climatic, geological and biological setting which will allow low-cost, sustainable, on-site bioremediation of metal contaminations. At the same time, the introduction of a concerted, internationalized education of interdisciplinary trained PhD students across Europe will ascertain a long-lasting, sustainable education profile with relevance to soil remediation.

The involvement of government agencies is focussing on the possibility to provide governments with fused guidelines for soil and water protection in a way that overcomes the practises of separated agencies by focussing on ecotoxicological risks resulting from metal contamination on-site as well as by transport through water paths in ground water and international water ways. Dissemination of results will be ensured by international congresses and publications. The management of an integrative, multi-partner consortium ensures the applicability by combination of eight sites across Europe in one modeling approach which will cover Northern, Southern, Middle and Eastern European sites to guarantee future applicability across Europe.