

**JOINT RESEARCH CENTRE** 

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EUROPEAN SOIL DATA CENTRE (ESDAC)

### Arsenic in topsoils

EUSO has developed a new method to model Arsenic (As) contamination in European soils using LUCAS 2009 soil samples. We introduced the GAMLSS-RF model, a novel approach that couples Random Forests with Generalized Additive Models for Location, Scale, and Shape. After fitting and validating a spatial model, we produced European-scale As concentration maps at a 250 m spatial resolution and evaluated the patterns against reference values. By overcoming limitations in existing databases and methodologies, the present approach provides an alternative way to handle highly censored data. The methodological approach is published in this paper. The model also consists of a valuable probabilistic tool for assessing As contamination risks in soils, contributing to informed policy-making for environmental and health protection. Data available:

### https://esdac.jrc.ec.europa.eu/content/arsenic-european-topsoils

#### Soil Mission calls (work programme 2024)

The call for proposal on the Soil Mission work programme 2024 has been published. These calls include 9 topics for 13 projects and a total budget of 134.5 Million Euros. Topics included: soil health in Living Labs(LL), LL in urban areas, dynamic monitoring of soil erosion, systems to quantify nitrogen fluxes, pollinators and key ecosystem functions, soil biodiversity for for healthy cropping systems, high spatial-resolution monitoring approaches for carbon farming, forest peatsoils, soil health in Africa. The calls will be presented in 25.4.24 in Soil Mission Info day. Calls will be open on 8.5.2024 with **deadline: 8.10.24.** Calls can be found in the linked document (pages 268-299): https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/wpcall/2023-2024/wp-12-missions horizon-2023-2024 en.pdf

#### Sediments removal costs

As part of the EUSO working group on soil erosion, we provide a comprehensive assessment of the existing costs of sediment removal from European Union (EU) catchments due to water erosion. These quantifications combine continental average and regionally explicit sediment accumulation rates with published remediation costs, integrating numerous figures reported in the grey literature. The cost of removing an estimated 135 million cubic meter (m<sup>3</sup>) of accumulated sediments due to water erosion only is likely exceeding 2.3 billion euro ( $\in$ ) annually in the EU and UK, with large regional differences between countries. Considering the sediment delivered through all soil loss processes (gullies, landslides, guarrying, among others) through extrapolating measured reservoir capacity losses, the sediment accumulation in the circa 5,000 EU large reservoirs exceeds 1 billion m<sup>3</sup> with a potential cost of removal ranging between 5 and 8 billion € annually. Details about both methods can be found in the published **paper**. Download the data:



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https://esdac.jrc.ec.europa.eu/content/sediments-removal-costs

# European Mission Soil Week 2024 (12-14 November 2024)

Mark your calendars for the European Mission Soil Week 2024 which will be held on 12-13 November 2024 in Brussels. These two days will include engaging activities, keynote interventions, panel discussions, networking, and more! On 14 November, there will be an exclusive side event, open to Mission Soil funded projects only, featuring cluster meetings on data and knowledge management, soil indicators and monitoring, as well as communication and stakeholder engagement. Please note that the 4th EUSO Stakeholder Forum will take place 22-24 October 2024. Details will follow in next newsletters.



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