

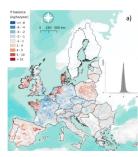
# **JOINT RESEARCH CENTRE**

EUROPEAN SOIL DATA CENTRE (ESDAC)

ESDAC: <u>http://esdac.jrc.ec.europa.eu</u> EUSO/ESDAC Newsletter No 160 (December 2023)

## Phosphorus cycle in European agricultural soils

Process-based biogeochemical models are valuable instruments to monitor the Phosphorus (P) cycle and predict the effect of agricultural management policies. Therefore, we upscaled the calibrated DayCent model at the European level using data-derived soil properties, advanced input data sets, and representative management practices. Our results depicted a P budget, total soil P, and available P content consistent with literature and national statistics. Agricultural management scenarios revealed a range of potential changes in the P budget by 2030 and 2050, influenced by the interlink of P with biogeochemical carbon and nitrogen cycles. Available datasets include Current P Budget and Soil Pools, Projected P Budget and Soil Pools for the EU and UK as well the datasets corresponding to the figures of the related manuscript. Download the data: https://esdac.jrc.ec.europa.eu/content/phosphorus-cycle-european-agricultural-soils



### Global application of Erosion potential method (EPM)

Most of the modelling applications are using Universal Soil Loss Equation (USLE)-type models. In the activities of the EU Soil Observatory working group on erosion, it is underlined that the soil erosion modelling community should also make a step towards inter-comparison of global multimodels, gaining new insights from the advantages and disadvantages found in the compared models. Here, we evaluate the applicability of the Erosion Potential Model (EPM) and its modified version (mEPM) for the estimation of the gross and net erosion rates at a global scale. The sensitivity analysis shows that the model results have the highest variability due to the soil protection (land cover) coefficient followed by the soil erodibility parameter. Therefore, as expected, the gross erosion rates by the EPM and mEPM are higher compared to the USLE-type models. Description of the application of EPM model at global scale is described in the manuscript. Download the data: <u>https://esdac.jrc.ec.europa.eu/content/erosion-potential-method-epm</u>

#### Call for Soil Erosion plot data in EU

EUSO is launching a collaborative network targeting soil erosion by water data from European field experiments (EU\_ERPlot). Data submissions from contributors across the European continent who wish to share access to their soil erosion measurements are welcome. The objective of this network is to make data open and accessible to the community, towards the improvement of the understanding of soil erosion processes, model development, and ultimately preserve past and present data records, in a harmonized format and updatable platform. <u>Deadline for the first stage</u>: **31.3.2024**. More info:

https://esdac.jrc.ec.europa.eu/themes/european-soil-erosion-field-measurements-plot

#### The Land and Soil Management Award

The prize rewards land use and soil management practices mitigating soil threats i.e. soil degradation, erosion, reduction of organic matter content, diffuse contamination, and compaction as well as the reduction of soil biodiversity, salinization, sealing, flooding and landslides. Deadline: 15.1.2024. Information: <u>https://europeanlandowners.org/awards/land-and-soil/</u>

#### <u>Clean environment and zero pollution</u> (2024 calls)

Under Horizon Europe, the European Commission funds research and innovation developing solutions to address pollution and to guarantee clean and healthy soils, air, fresh and marine water for all. The 3 calls for proposal include: 1) Techniques to recover/recycle fertilising products from secondary raw materials 2) Demonstrating how regions operate within safe ecological & regional nitrogen and phosphorus boundaries and 3) Environmental impacts of food systems. Deadline: 22.2.2024. Available the WorkProgramme 2023-2024 for HORIZON cluster 6 "Food, Bioeconomy, Natural Resources, Agriculture and Environment"







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