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European soil observatory (EUSO) structure and perspectives

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The European Soil Observatory (**EUSO**) was launched in December 2020 to generate and disseminate policy-relevant and harmonized EU-wide soil data and indicators in support of the soil perspectives of the European Green Deal, in particular the new Soil Strategy and the Mission on Soil Health and Food. Among the activities of the Observatory, paramount importance is placed on the development of an EU-wide soil monitoring system, to assess progress towards soil-related targets, to support research & innovation and provide a European Soil Forum dedicated to a broad user base (citizens, farmers, land planners, scientists). These features will be an important step in providing access to a huge range of soil-related data through dedicated data-streams, from biodiversity to heavy metal concentrations.

The EUSO will establish a comprehensive **dashboard** containing indicators that present data on soil-related issues within and, in some cases, outside of the EU. Examples of indicators include soil erosion, soil carbon, pollutants and soil nutrients (phosphorus, nitrogen, potassium) with relevance to the new EU Soil Strategy, the Common Agricultural Policy (CAP), Zero Pollution Action Plan and Sustainable Development Goals (SDGs).

Indicators will be fed through models and operational soil monitoring systems ensuring seamless and harmonised data flows, where the LUCAS Soil programme will be fully integrated with national soil monitoring systems. In addition to supporting the development of soil health indicators, an integrated monitoring system should also support the assessment of soil-related ecosystem services.

Operational policy support for the policy makers and other stakeholders will be a key issue for the development of accurate soil properties assessment and specific soil management strategies and tailored suggestion to member states targeted to their farming systems. The EUSO forum was a great debate where five working groups were launched addressing key aspects in the implementation or the underpinning knowledge base of the EUSO. These included: i) soil monitoring, ii) soil biodiversity, iii) soil data sharing, iv) soil erosion and v) soil pollution. A strong emphasis will be given to data harmonization, a specific section on data is proposed to coordinate MS efforts in providing data that need to be harmonized and out of that comprehensive statistics and maps will be delivered to the stakeholders.

The EUSO will work with EU countries **to identify and present** relevant national soil data, possibly using advanced web service technologies. The EUSO builds on the achievements of the European Soil Data Centre (ESDAC), which has been the thematic node for soil-related data in Europe since 2006. The EUSO aims to incorporate the legacy data stemming from EU-funded soil-related projects in order not to lose valuable, useful and usable results for the future. The EUSO will contribute to collaborate with the European Soil Partnership a regional partnership of European countries under the United Nations FAO' Global Soil Partnership (GSP). from the EUSO aims to bring a European perspective to the many activities of the GSP in the areas of sustainable soil management, raising soil awareness, soil research and soil data collection and handling.