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EUdaphobase - building bridges between cohabiting soil communities, environments, and methodologies

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Aim: Edaphobase is a database previously constructed by the Senckenberg Natural Museum in Görlitz in Germany for the purpose of connecting soil invertebrate taxa to their environment. To extend Edaphobase into a warehouse for data on soil biodiversity at the European level and improve its usefulness, COST Action “EUdaphobase” was launched. Action gathers a network of European specialists working on enlarging existing capacities, and improving the technical capabilities, to provide a unique database that would be used by the different levels of stakeholders (from farmers, research and education institutions to decision makers). Taxonomists, ecologists, modelers of soil ecosystem processes, financial and IT specialists joined to form a holistic picture of soil biodiversity and introduce it into the decision-making process in Europe.

Method: WG 7 of EUdaphobase is focused on two goals - to enable a framework for integrating the data on fungi, bacteria and microeukaryotes, and collating the data derived by molecular methods (metabarcoding, NGS-based, environmental DNA/RNA), on all soil organism groups.

Results: The highly demanding technical problems of incorporating fungal and molecular data into the already existing framework of Edaphobase were resolved. The joint work of researchers working on different soil organisms and techniques resulted in the unique possibility for a variety of users to provide/analyze/use data that include cohabiting taxa, their environments, and mutual relationships.

Conclusions: The outcome will enable the usage of the upgraded Edaphobase for holistic soil state evaluation and monitoring, as well as monitoring of the dynamics of soil communities/environments involved in different ecosystem services on the European level.