

SoilRise aims to extend expertise and knowledge on soil biota in academic and public networks as a basis for the utilisation of citizen science in monitoring duties below ground. Biodiversity monitoring is mostly limited by missing expertise, money and time. Belowground biota is even harder to describe, count, or characterize due to its cryptic mode of life. However, soil biota is crucial for the functioning of all terrestrial ecosystems including land use systems. Sustainable land use relies on ecosystem service provisioning of soil biota. Hence, monitoring is of great importance. SoilRise will create a mentor-based research network of Citizen Scientists to multiply knowledge and expertise among gardeners, farmers, and the general public. Monitoring soil biota will enable a certain level of taxonomy, activity, or functional diversity. SoilRise will start and exemplify this for earthworm communities in farmland (arable or grassland) and urban gardens and greens. Finally addressing networks of urban gardeners and farmer associations, SoilRise will develop a multiplication of expertise by implementing earthworm monitoring practices into teaching at universities and even farm schools. Students then go as mentors to certain rural communities (farmer associations) or stage citizen science events in urban gardens related to gardener networks. In the long run, well-educated laymen can provide earthworm monitoring data of high value complementing biodiversity monitoring in the cultural landscape of Europe.

By comparing rural and urban environments, and by taking into account site-specific characteristics (land use type, management practice) as well as the pedoclimatic gradient in Europe, SoilRise will strongly increase the understanding of diversity patterns in and threats to earthworms. Building on these results SoilRise will model earthworm community distribution across Europe.