



BiodivERsA project VineDivers: Analysing interlinkages between soil biota and biodiversity-based ecosystem services in vineyards across Europe

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Essential ecosystem services provided by viticultural landscapes result from diverse communities of above- and belowground organisms and their interactions. For centuries traditional viticulture was part of a multifunctional agricultural system including low-input grasslands and fruit trees resulting in a high functional biodiversity. However, in the last decades intensification and mechanisation of vineyard management caused a separation of production and conservation areas. As a result of management intensification including frequent tilling and/or use of pesticides several ecosystem services are affected leading to high rates of soil erosion, degradation of soil structure and fertility, contamination of groundwater and high levels of agricultural inputs. In this transdisciplinary BiodivERsA project we will examine to what extent differently intensive managed vineyards affect the activity and diversity of soil biota (e.g. earthworms, collembola, soil microorganisms) and how this feed back on aboveground biodiversity (e.g. weeds, pollinators). We will also investigate ecosystem services associated with soil faunal activity and biodiversity such as soil structure, the formation of stable soil aggregates, water infiltration, soil erosion as well as grape quality. These effects will become increasingly important as more extreme precipitation events are predicted with climate change. The socio-economic part of the project will investigate the role of diversely structured, species-rich viticultural landscapes as a cultural heritage providing aesthetic values for human well-being and recreation. The project objectives will be analysed at plot, field (vineyard) and landscape scales in vineyards located in Spain, France, Romania and Austria. A detailed engagement and dissemination plan for stakeholder at the different governance levels will accompany scientific research and will contribute to the implementation of best-practice recommendations for policy and farmers.