



Management concept to promote biodiversity-linked ecosystem services in vineyards (Project PromESSinG)

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Although vineyards are intensive used agro-ecosystem with high economic importance worldwide the efforts to establish a sustainable viticulture system have been increased dramatically. In accordance with these efforts knowledge about the ecosystem vineyard and the influencing factors is highly needed. In a three years project the question whether and how biodiversity can support ecosystem services is addressed in five European countries, representing temperate vine-growing regions. Vineyards can provide high levels of biodiversity inside the cropped area, which cannot be found in annual cropping systems. Our research will have a strong focus on the biodiversity in the soil, analyzing microorganisms as well as the meso- und macrofauna. These parameters will be linked with different ecosystem services of the soil, like organic matter degradation, provision of water and nutrients, influences on the soil structure and the interaction of beneficial and phytopathogenic microorganisms and insects. In order to find options for promoting biodiversity and ecosystem services we study three different types of vineyard soil management: bare ground, complete vegetation cover, and both types arranged in alternating alleys. Further treatments of green manure and species rich seed mixtures are investigated in single countries. The second influencing factor analyzed is the surrounding landscape structure, as it is known that a high density of semi-natural habitats can provide biodiversity and ecosystem services for agricultural fields. Therefore vineyards with a different density of hedges, woodlands, and grasslands were selected for the study. The project started 2015 and first results concerning the influence of the soil management system on the degradation of the soil organic matter and the abundance of the macrofauna showed already first responsive effects in Austrian vineyards.