

## Projects funded 2013-2014 Call

### PromESSinG: Management concept for Central European vineyard ecosystems: Promoting ecosystem services in grapes

#### Context

New approaches are needed to secure food production while creating sustainable agricultural systems requiring as few external inputs as possible. The interaction between biodiversity and ecosystem services (ESS) is recognized to play a key role in this context although large gaps in knowledge exist. Cultivation of grapevine as a perennial crop has a high potential of providing ESS linked to biodiversity since viticulture does not aim at producing maximum yield but rather high quality products. Additionally, viticulture can provide high levels of biodiversity inside the cropped area, which cannot be found in annual cropping systems. Thus, viticultural systems provide ideal conditions for analyzing ESS relevant for the grapevine grower such as soil fertility and stability, water retention, pest and weed control as well as grape quality in relation to soil biodiversity and functioning.

#### Main objectives

The major aim of PromESSinG is to identify management options for promoting biodiversity linked ESS in order to reduce external inputs in Central European vineyard ecosystems. The project intends to unravel biodiversity driven processes associated with the main ESS in viticultural systems taking different management factors into account. A particular focus will be on soil biodiversity, as interactions between the diverse soil biota as well as chemical and physical properties of the soil environment are fundamental for the provision of soil-based ecosystem services.

#### Main activities

The intended research will be conducted in temperate vineyard systems in France, Switzerland, Germany, Austria and Romania, thus covering a gradient from maritime to continental climates. In a common study with all countries involved and using a standardized sampling design PromESSinG will analyze the links between diversity of soil relevant species groups (soil microflora including mycorrhiza, meso, macrofauna, plants), soil function and respective supporting, regulating and provisioning ESS. Management effects on these interactions are analyzed on two different scales by combining a) the factor soil management including three vineyard ground management treatments of different disturbance intensities with b) the factor landscape management consisting of three landscape heterogeneity levels.

In addition, individual studies based on already existing experimental sites in Germany, Switzerland and France focusing on nitrogen fertilization and farming type (integrated, organic, biodynamic) will further promote knowledge on biodiversity-ESS relationships in the vineyard.

Specific activities for dissemination of the project outputs and involvement of stakeholders / policy-makers during the project will be implemented. The PromESSinG project will indeed integrate the entire knowledge chain from providing novel and improved techniques for measuring ESS in viticulture, performing empirical research in a common study across countries, to fostering exchange and consultation with local and regional stakeholder in each country. The knowledge will be spread to all major relevant stakeholders and interested parties to achieve improvements in the utilization of ecological services provided by soil and landscape management for the grapevine grower.



Under vine vegetation

#### Partners:

**Hochschule Geisenheim University, GERMANY (Coordinator)**

University of Natural Resources and Life Sciences, Vienna, AUSTRIA

Bordeaux Sciences Agro, FRANCE

Ovidius University of Constanta, ROMANIA

University of Fribourg, SWITZERLAND

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#### Further information:

**Prof. Dr. Ilona Leyer**

[ilona.leyer@hs-gm.de](mailto:ilona.leyer@hs-gm.de)

#### Website:

[www.promessing.eu](http://www.promessing.eu)

