Field experiment in Sweden.

Partners:

University of Hohenheim, Stuttgart, GERMANY (Coordinator)

Regionalentwicklung Oberallgaeu, Altusried, GERMANY

Universidade de Lisboa, Lisbon, PORTUGAL

Universidade dos Açores, Ponta Delgada, PORTUGAL

Swedish University of Agricultural Sciences, Alnarp, SWEDEN

Agroscope, Zürich, SWITZERLAND

Duration:
02-2017 to 01-2020

Total grant:
€ 1,684,974

Further information:

Prof. Dr. Frank Rasche
frank.rasche@uni-hohenheim.de

Website:
bioinvent.uni-hohenheim.de

BIOINVENT - Generic bio-inventory of functional soil microbial diversity in permanent grassland ecosystems across management and climate gradients

Context

BIOINVENT introduces a science-based research approach to close remaining knowledge gaps on the efficiency of permanent and extensively managed grassland systems to enhance above- and below-ground biodiversity. The pan-European study scale of BIOINVENT ranging from the Azores to northern Sweden will yield in a profound understanding of interdependent effects of grassland management and agro-climatic distinctions on soil microbial dynamics and their consequences for central ecosystem services. BIOINVENT contributes to ongoing EU-incentives to develop future-oriented management and monitoring objectives to reach optimal protection and utilisation of soil biodiversity and its contribution to various ecosystem services in permanent grassland ecosystems.

Main objectives

BIOINVENT's main objectives are:

- To **generate fundamental understanding of soil microbial biodiversity and its functional potential controlled by permanent grassland systems** along management and agro-ecological gradients across Europe;
- To apply this fundamental knowledge to **develop a novel and generic bio-inventory toolbox** ('BIOINVENT') to enable prospective monitoring of below-ground soil microbial diversity and functional properties, such as 'provision', 'support' and regulation' functions in European grassland ecosystems at various spatial scales.

Main activities

BIOINVENT applies a concerted 2-stream approach. In the 'Research Stream', all partners apply process-oriented research activities in experimental settings and on farmers' fields allowing for a spatial assessment of soil microbial diversity and its functional potential across European grasslands. A participatory 'Outreach Stream' is simultaneously initialised to engage stakeholders right from the start of the project and to disseminate project outcomes in an adjusted manner to various stakeholder groups through the establishment of diverse communication channels.

BIOINVENT will also transfer the knowledge on conservation of below-ground microbial diversity in permanent and extensively managed grassland systems by accomplishing close interactions with non-governmental organisations (NGOs) in joint research and outreach activities, with farmers by performing a survey on farmers' fields, and with relevant decision makers from national to European levels through the establishment of diverse communication channels including multi-language media (e.g., website, print media), workshops and round-tables.