

ANNEX
PROJECTS IN THE THEMATIC SESSION ON AGRICULTURE

BIOGEA – Testing BIOdiversity Gain of European Agriculture with CAP greening

BIOGEA examines how green and blue infrastructures (GBI) can be better managed through the CAP measures and provide greater benefits. More precisely, it will study how the implementation of greening measures combined with other changes introduced by the latest round of CAP reform are impacting on GBI in a variety of farmed landscapes and in turn how the presence or absence (and spatial arrangement) of GBI affects biodiversity and ecosystem services. On a practical level, it will provide toolkits for farmers and advisors to optimise the placing of greening measures in agricultural landscapes to promote GBI and resulting ecosystem services, both at local and national levels.

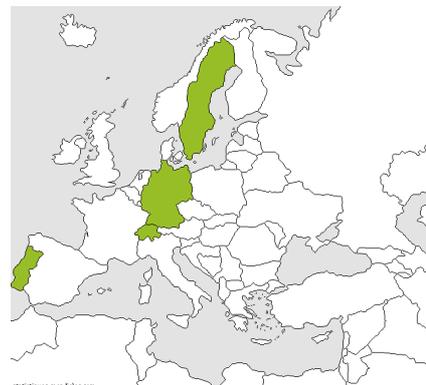


Study sites:

Germany – national level and two studies in South west Germany and Southeast Germany
Spain – national level and two case studies in central Spain and Southwest Spain
Bulgaria – and two case studies in central Bulgaria and central western Bulgaria

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

In BIOINVENT works to advance the understanding of soil microbial diversity and its potential in permanent grassland systems along management (i.e., fertilisation, plant species composition) and agro-ecological gradients across Europe (North-South). This knowledge will be used to develop a novel bio-inventory toolbox to enable the monitoring of the status and trends of below-ground soil microbial diversity and functional properties in European grassland ecosystems at various spatial scales and will allow drawing conclusions on how to manipulate productivity through grassland management. It will also provide the fundamental knowledge needed to extract functional groups of soil organisms for future work linked to the use of bio-fertilizers.



Study sites: Sweden (SE), Germany (DE), Switzerland (CH), Portugal-Mainland (PT-M), Portugal-Azores (PT-A).

DIGGING DEEPER – Agro-ecosystem diversification: digging deeper

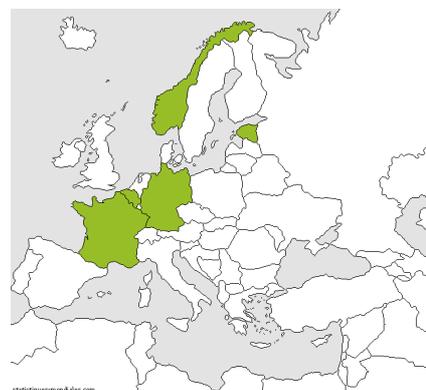
Digging Deeper will unravel whether changes in above-ground biodiversity alter the relationship between soil biodiversity and ecosystem multi-functionality, and if innovative farming practices that increase plant diversity are a vehicle for optimising the simultaneous delivery of multiple beneficial soil ecosystem services for resilience and adaptation to climate change. Relying on a network of 250 sites across arable farming systems and grasslands across Europe, it will compare ecosystem services (e.g. carbon sequestration) in organic versus conventional farming and develop a framework to identify innovative land management practices that maximize impacts on the yield, biodiversity and sustainability of agro-ecosystems.



Study sites: Network of 250 sites across arable farming systems and grasslands in Germany, France, Spain, Sweden and Switzerland

IMAGINE – Integrative Management of Green Infrastructures Multifunctionality, Ecosystem integrity and Ecosystem Services: From assessment to regulation in socio-ecological systems

IMAGINE aims at quantifying the multiple functions, ecosystem services and benefits provided by Green Infrastructures (GI) in different contexts from rural to urban, using case studies ranging from a North-South gradient across Europe. Within this quantification IMAGINE will explicitly consider ecosystem disservices, particularly in agricultural systems, and focus on model-based exploration of alternative management options for designing multifunctional GI-networks. It will provide guidelines and elaborate ready-to-use methods for an integrative management of GI multifunctionality, together with a toolbox of adaptive management and restoration techniques particularly relevant to ecological engineers and landowners.



Study sites:

France: Syndicat Mixte Bassin de Thau (Mediterranean sea) and PNR Scarpe Escaut (Nord Pas de Calais)

Norway: Greater Trondheim Region

Belgium: Catchment of the middle and upper courses of the rivers Grote Nete and Molsse Nete

Estonia: Tallinn City hinterland

Germany: Bornhöved Lake District

OSCAR – Optimising the configuration of woody riparian buffer strips along rivers to enhance biodiversity and ecosystem services

OSCAR will investigate the effects of woody buffers and their spatial arrangement in a green infrastructure network on biodiversity and ecosystem functions. It will develop practical guidance on how to optimize the configuration of woody buffers to effectively increase ecosystem services (e.g. biocontrol, pollination and water pollution control), biodiversity, connectivity, and the potential to mitigate the temperature increase due to climate change.



Study sites: France (FR), Germany (DE)

SOILCLIM – Managing soil biodiversity and ecosystem services in agroecosystems across Europe under climate change

SOILCLIM will address the pressing need to better predict consequences of climate change on soil biodiversity and ecosystem services in agro-ecosystems over a European transect of climatic conditions and soil properties. It will investigate in particular the impacts of different long-term fertilization strategies on ecosystem services such as crop productivity and biocontrol. Together with the development of indicators that can act as an early warning system for a decline of the provision of soil ecosystem services in response to summer drought, the project will provide practical evidence of how to counteract negative consequences of climate change on agricultural production.



Study sites: six pairs of arable fields with non-irrigated cereal crops of regional importance in southern Sweden, central Germany and southern Spain.

SOILMAN – Ecosystem services driven by the diversity of soil biota – understanding and management

SoilMan will advance the understanding of how the interplay of farm based soil management practices affect soil biodiversity and how soil biodiversity in turn feeds back to soil functions and ecosystem services as factors for productivity and sustainability across agricultural systems of main biogeographical regions of Europe. On a practical level, it will deliver strategies for improving soil biodiversity and associated services for the long-term sustainable management of soils as a basis of human nutrition and wellbeing and develop cost-effective indicators on soil resilience and resistance intended for farmers and farm advisors.



Study sites: Field sites of typical farming systems in Spain, France, Germany, Sweden, Romania

URBANMYCOSERVE – Understanding and Managing Urban Ectomycorrhizal Fungi Communities to Increase the Health and Ecosystem Service Provisioning of Urban Trees

URBANMYCOSERVE will provide an assessment of the mycorrhizal communities and functional group composition of trees, and of their environmental drivers, using next generation sequencing techniques. It will identify and relate specific ectomycorrhiza (EcM), or functional groups of EcM to tree fitness and ecosystem service delivery and resilience. On a practical level, it will develop and test (in situ & ex situ) a dedicated EcM-inoculum to improve tree health, ecosystem service delivery and resilience with various applications ranging from urban to rural systems.



Study sites:
Belgium (Leuven), France (Strasbourg), Portugal (Porto).