

RESOURCE USE (Adaptation and Mitigation)

Agro-environment and climate change



Parallel Thematic Session

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Agro-environment and climate change

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Cooperation supported by FCT, I.P.:

Bioinvent Generic Bio-inventory of functional soil microbial diversity across management and climate gradients

Practical problem

BIOINVENT aims for in depth comprehension, at a Pan-European scale, of the interdependent effects of management intensity and climatic distinctions on soil microbial dynamics and their consequences for ecosystem services. BIOINVENT follows a concerted 2-step approach: Research and Outreach Streams.

Partners

Type:

Research/ Teaching

Other company

Name:

Franck Rasche (University of Hohenheim); Andreas Luscher (Agroscope, Institute for Sustainability Sciences ISS); Linda-Maria Martensson (Swedish University of Agricultural Sciences); Cristina Cruz (Universidade de Lisboa)
Sabine Weizenegger (Regionalentwicklung Oberallgaeu); Luís Silva (Fundação Gaspar Frutuoso)

Project

Objectives:

Generate understanding on soil biodiversity and its critical functioning in distinct grassland ecosystems;
To develop a generic inventory toolbox to monitor future trends of belowground soil microbial diversity;
To identify threats and benefits of current grassland management in Europe.

Expected results:

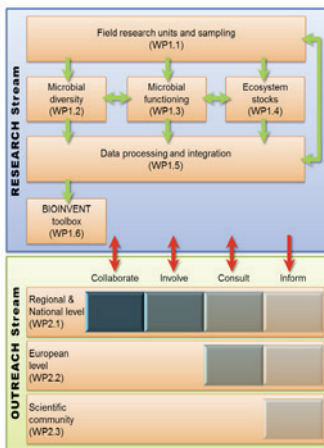
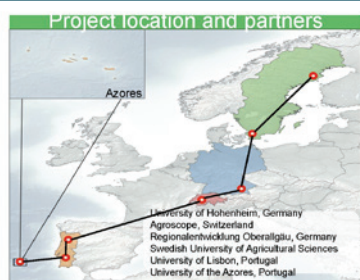
A knowledge baseline for legislative frameworks that identifies agronomic and ecological drivers of soil biodiversity threats that impact the maintenance of essential ecosystem services in grasslands;
Recognise environmental and biodiversity issues, and to develop strategies of productive and sustainable grasslands that meet consumer demands and environmental protection requirements

Results so far/first lessons:

Soil samples were collected and common protocols developed. A big effort is being performed in order to adapt state of the art techniques to relate soil biodiversity with soil function and ecosystem services.

Who will benefit:

Validated results will be disseminated in an adjusted manner to: NGO - collaborate, farmers - involve, deciders -inform.



Start: February/2017
End: January/2020

Budget: 938.075 €

Contact: Cristina Cruz
E-mail: ccruz@fc.ul.pt



Supported by:



Start: 01/07/2016
End: 30/06/2019

Budget: 200.000 €

Operational Group:

Evaluation of carbon footprint in relation to highly sustainable viticulture systems

Valutazione dell'impronta di carbonio in relazione a strategie viticole ad alta sostenibilità

Practical problem

The agricultural production is one of main sources of greenhouse gases, however there's little information on energy use and CO2 emission on fruit systems. This condition deeply affects the vineyards, especially those located in Italy and Emilia-Romagna Region.

Partners

Type:

Name:

Research Institutes

CRPV Soc. Coop.; Astra - Innovazione e Sviluppo; Alma Mater Studiorum, Università di Bologna; Università Cattolica del Sacro Cuore

Farms

Soc. Agr. Manzoni; Soc. Agr. Podere della Rosa; Az. Agr. Ovi Dina

Wineries associations

Gruppo CEVICO; CAVIRO

Wine-growers and wineries association

Cantine Riunite & CIV

Wine-growers association

Cantina Sociale di San Martino in Rio

Project

Objectives:

The project aims at getting a deeper insight on carbon footprint in vineyards in relation to highly sustainable agricultural systems, that are able to reduce carbon emission and enhance carbon sequestration.

Expected results:

The aim is to demonstrate to growers who adopt or want to adopt organic or biodynamic production method, the benefits of innovative agronomic techniques in terms of carbon sequestration. These techniques consist in management of soil (cultivation along row of self-seeding legumes and between row of a mixture of herbaceous species) and canopy (topping techniques, late defoliation and use of kaolin).

Results so far/first lessons:

Self-seeding legumes and mixture of herbaceous species have shown a good settlement capacity. The first reliefs indicate an improvement of plants microclimate, an increase of biodiversity and a positive carbon footprint budget in thesis where cover crops are used.

Who will benefit:

Winegrowers.

Contact: Giovanni Nigro
E-mail: gnigro@crpv.it



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Operational Group:

GOEfluentes - Livestock effluents: strategic approach towards agronomic and energetic valorization of flows in the farming activity.

GOEfluentes - Efluentes de pecuária: abordagem estratégica à valorização agronómica/energética dos fluxos gerados na atividade agropecuária.

Practical problem

Livestock production is concentrated in certain regions, some without enough area for landspreading valorization of effluents. Therefore, in order to be competitive and comply with legal requirements, the sector should promote a circular economy, pursuing new alternatives for effluents management.

Partners

Type:

Name:

Research/Teaching

INIAV - Instituto Nacional de Investigação Agrária e Veterinária, I.P.; Instituto Nacional de Investigação Agrária e Veterinária IP.; Instituto Superior de Agronomia; Universidade de Trás os Montes e Alto Douro; Universidade de Évora

Agri association

Associação Portuguesa de Criadores da Raça Frísia; Associação Portuguesa dos Industriais de Alimentos Compostos para Animais; Federação Portuguesa das Associações de Suinicultores

Agri enterprise

CAMPOAVES; VALORGADO; ALIRAÇÕES; Leal & Soares,SA; Ingredient Odyssey

Consultant

TTerra-Engenharia e Ambiente, Lda.

Project

Objectives:

Valorize livestock effluents as a resource, focusing on the production and integrated management of the different flows generated; Optimize effluents use as secondary raw materials, recovering energy and nutrients, improving farm nutrient balances and promoting sustainable management.

Expected results:

A roadmap for effluents management, including technology portfolio, linked to farm characteristics and regional constraints; Support decision making on centralized/decentralized solutions; Contribute to sustainable livestock intensification and landscape planning, to face climate change and resources scarcity.

Results so far/first lessons:

Recognition of the need for: Integration of livestock production data at local/regional/national scale; Landscape planning for livestock production towards environmental sustainability, sector competitiveness and rural development.

Who will benefit:

The beneficiaries will be the animal producers and farmers, its sustainability and the image and brand of the sector.

Start: September/2017
End: August/2020

Budget: 509.980 €





Supported by:



Start: January/2018
End: December/2022

Budget: 234.208 €

Operational Group:

GO SOLO – Development of an expedited low-cost soil organic matter evaluation method for sown biodiverse pastures.

GO SOLO: Promoção de práticas agrícolas conservadoras do solo através da demonstração, expedita e a baixo custo, do seu impacto na matéria orgânica.

Practical problem

Soil organic carbon (SOC) is a key variable for pasture management and in carbon sequestration projects. However, it requires an expedited surveying method capable of cost-effectively covering large areas and assessing spatial heterogeneity for differentiated management recommendations.

Partners

Type:

Other company

Research/Teaching

Agri Association

Agri Enterprise

Name:

Terraprima – Serviços Ambientais, Sociedade Unipessoal Lda.; Fundação Eugénio de Almeida

Universidade de Évora; Instituto Nacional de Investigação Agrária e Veterinária IP

Confederação dos Agricultores de Portugal

Terraprima Sociedade Agrícola Lda.; ZEA - Sociedade Agrícola Unipessoal, Lda.; Tapada dos Números, Sociedade Agrícola, Lda.; Sociedade Agrícola Herdade dos Padres, SA; Herdade da Machoqueira do Grou – Cooperativa Complementar de Produção Agrícola; Herdade do Azinhal

Project

Objectives:

The goal of GO SOLO is to an expedited and low-cost method for SOC mapping and assessment of carbon sequestration in sown biodiverse pastures. The method will use visible and near-infrared spectroscopy (VNIR) using field sensors and satellite data.

Expected results:

High-resolution SOC maps for 7 initial farms during 5 years, including detailed geospatial analysis;
Assessment of the effects of pasture management in SOC accumulation;
Forecast of carbon sequestration in the initial farms and an extrapolation of the data for potential new pasture areas;
Normalized method for VNIR assessment of SOC.

Results so far/first lessons:

The first activities of GO SOLO will be the division of farms into homogenous plots using soil electrical conductivity and environmental variables. In each plot, SOC will be measured using conventional sampling and laboratorial analysis. These measurements will be used to calibrate the VNIR methods. Farmers will be accompanied by technical advisors to identify management practices in each plot.

Who will benefit:

Farmers will be able to optimize management for SOC increase; policy-makers will better assess carbon sequestration.

Contact: Ricardo Teixeira
E-mail: ricardo.teixeira@terrappima.pt



Supported by:

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 696391



Start: April/2016
End: March/2019

Budget: 2.230.218 €

Horizon 2020:

HNV-LINK: High Nature Value Farming: Learning, Innovation and Knowledge

Practical problem

Abandonment or degradation, intensification of production, and socio-economic decline are long-standing threats for extensive and nature-friendly farming systems. The challenge is to increase their socio-economic viability while maintaining natural values and ecosystem services provided to the society.

Partners

Names:

Centre International de Hautes Etudes Agronomiques Mediterraneennes (FR); The European Forum on Nature Conservayion and Pastoralism (UK); Universidade de Évora (PT); Lokalna Akcijska Grupa LAG 5 (HR); Universitatea de Stiinte Agricole si Medicina Veterinaria Cluj Napoca (RO); Society for Territorial and Environmental Prosperity (BG); Lansstyrelsen i Vasta Gotalands Lan (SE); Applications des Sciences de L'Action (FR); Institut of Technology Sligo - ITS (IE); Panepistimio Thessalias (GR); Helsingin Yliopisto (FI); Conservatoire des Espaces Naturels du Languedoc Roussillon Association (FR); Fundacion Entretantos (ES).

Project

Objectives:

Create a community of practice and knowledge by linking 10 areas throughout the EU where HNV farming systems are prevalent. These "learning areas" are used to evaluate innovation examples and gaps relevant to HNV systems. Innovation types include technical, commercial, social, institutional, and of policy.

Expected results:

- Inventory of grassroots innovations in each learning area;
- an "Innovation Fair" to foster peer learning;
- a set of educational materials to expose educators and students in agricultural studies, rural development and conservation alike to HNV concepts, challenges and opportunities;
- an interactive Atlas of Innovations feasible within HNV farming areas;
- research papers and presentations.

Results so far/first lessons:

- Review of innovations benefiting HNV farming systems, farmers and communities;
- Ten learning areas established with local actors;
- Baseline assessment of challenges and most promising evolutions in those 10 learning areas.
- Website: <http://www.hnmlink.eu/>

Who will benefit:

Farmers, communities and ecosystems in high-nature farmland areas.



Contact: Maria Teresa Pinto Correia
E-mail: mtpc@uevora.pt



Supported by:

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 727368



Start: January/2017
End: December/2019

Budget: 1.999.999 €

Horizon 2020:

Inno4Grass: Shared Innovation Space for Sustainable Productivity of Grasslands in Europe

Practical problem

Collaboration between farmers, advisors and scientists is insufficient. Latest results of research are not sufficiently put into the practice and practitioners are not sufficiently aware of knowledge of relevance to their field. Information about novelties at farm level is not disseminated effectively.

Partners

Names:

Grünlandzentrum e.V. (DE); TEAGASC (IE); Wageningen UR (NL); RHEA Research Centre (BE); French Livestock Institute (FR); French Chambers of Agriculture (FR); Chamber of Agriculture Lower Saxony (DE); Institute of Grassland Science, University Göttingen (DE); Institut National de la Recherche Agronomique (FR); Tr@me srl (BE); Association Wallonne de l'Elevage asbl (BE); CAH Vilement University of Applied Sciences; Swedish University of Agricultural Sciences (SE); Northern Dutch Farmers Association (NL); Consiglio Nazionale delle Ricerche (IT); Poznan University of Life Sciences Department of Grassland and Natural Landscape Sciences (PL); Wielkopolska Chamber of Agriculture (PL); Svenska Vallföreningen (SE); Associazione Italiana Allevatori (IT); Centro di Sperimentazione Agraria e Forestale Laimburg (IT)

Project

Objectives:

The overall objective of the project is to bridge the gap between practice and science communities to ensure the implementation of innovative systems on productive grasslands, to increase profitability of European grassland farms and to preserve environmental values.

Expected results:

I4G will set up a Facilitator Agents network, which will capture and synthesize innovative farm novelties. It will upgrade this capital via multi-actor approaches and science dialogue and will boost cross-border collaboration and dissemination approaches which will convey innovations to practice. It will deliver training sessions on this new grassland knowledge and will mobilise key actors.

Results so far/first lessons:

The project started only recently and has not delivered results yet. However first analysis seems to show that innovation types and needs vary significantly with national and regional conditions. Transferability might become an important issue requiring special emphasis. At least 100 practice abstracts and 104 video clips describing innovative practices will be provided.

Project website: <http://inno4grass.eu>

Who will benefit:

Farmers, extension services and research community for improving applied research.



Contact: Grünlandzentrum
Niedersachsen/Bremen
E-mail: arno.krause@gruenlandzentrum.de



Supported by:



Start: February/ 2013
End: December/ 2016

Budget: 210 000 €

PRODER:

Low Carbon Wine – Sustainable wine producing techniques emitting less GHG (Alentejo Region)

Vinho de Baixo Carbono – Desenvolvimento de um novo processo de gestão vinícola na produção de vinho mais sustentável e com menores emissões de GEE no Alentejo

Practical problem

Evermore consumers pay attention to the sustainability of the products they buy, as such there is a demand for sustainable products like the low carbon labelled ones. Although there's a certifying entity, there is no production of low carbon wine in Portugal nor in Europe certified by a third party.

Partners

Type:

Consultant
Farmer
Research/Teaching

Name:

Consulai, Lda
Herdade da Mingorra
Instituto Superior de Agronomia

Project

Objectives:

Identify and implementation of new cultural practices for grape production with low carbon. Case study of the impact of new cultural practices regarding the reference system in terms of GHG emissions. Creation of a low carbon wine as well as a label. Switch from bulk wine to bottled low carbon wine.

Expected results:

Study about the adaptation of new cultural practices with the intent of maximizing carbon sequestration in the vineyard. Development of a low carbon wine that could be certified by a third party. Substantial reduction of emission of GHG in the low carbon wine when compared with a conventional mad one. Replacement of 5% of bulk wine for bottled low carbon one

Results so far/first lessons:

The new label – *Imagem* – was created and certificated by a third party – DNV – with the PAS2050, certifying it as a low carbon wine. In comparison with a conventional made wine, the *Imagem* generated less 10% of GHG with in a total of 0,930 and 1,035 kgCO₂eq/UF for *Imagem* and a conventional wine, respectively.

Who will benefit:

Consumers and farmers who are interested in a quality wine made with ecological responsibility.



Contact: Bruno Caldeira
E-mail: bcaldeira@consulai.com



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PROGRAMA DE
DESENVOLVIMENTO
RURAL 2014-2020



Practical problem

The agricultural sector contributes to the emission of greenhouse gases (GHG) and to major changes in the climate system. At the same time, the projected variations in climatic elements are of utmost relevance for rainfed agriculture, since greatly influence the growth and productivity of plants.

Partners

Type:

Agri enterprise
Agri association
Farmer

Name:

ACUSHLA, SA
Centro de Gestão da Empresa Agrícola Vale do Tua; Centro de Gestão de Empresas Agrícolas Vimiosense
Herdeiros de Manuel Alberto Ferraz de Sousa Ataíde Pavão; Almira dos Anjos Lopes Robalo Cordeiro; Lúcia Maria Lage Gomes de Sá; Maria dos Anjos Rosa Rodrigues; Manuel Domingos Carvalho

Project

Objectives:

Introduction of new practices that promote the performance of olive rainfed orchards under a changing environment. A mitigation approach (higher CO2 sequestration and lower emissions of GHG) and adaptation measures at soil and canopy levels are undertaken at the same time.

Expected results:

Significant positive results are expected in the agronomic, environmental and socio-economic fields, through: - The publication of a "Manual of Best Practices" on mitigation and adaptation measures to climate change; - The dissemination, among farmers, associations, technicians, academics and civil society, of the new solutions by publications, seminars, conferences, WEB page and the focus group.

Results so far/first lessons:

Dissemination of some practices to farmers, associations and academics through seminars and conferences.

Who will benefit:

The project partners, farmers, technicians, academics of higher and vocational education and the civil society.

Start: January/2017
End: December/2020

Budget: 420.883 €





Supported by:



Start: 01/12/2016
End: 30/11/2018

Budget: 33.340 €

Operational Group:

VleesVEEPAS - Emission reduction through good management in beef cattle

Emissiebeperking door goede praktijk bedrijfsvoering vleesvee - VleesVEEPAS

Practical problem

To renew their permission, a number of cattle farms need to prove that they will substantially decrease their level of ammonia emission. In Flanders, only a few approved techniques for beef cattle farms exist. Thus, there is a need for practical and cost-efficient new techniques.

Partners

Type:

Innovation and extension institute

Innovation support service

Research institute

Beef cattle farmers

Name:

Inagro

Innovatiesteunpunt

ILVO

Groene kring Vleesveehouders; Vleesveehouders studiekring BWB stamboek; Other beef cattle farmers

Project

Objectives:

Find feasible solutions regarding manure and bedding management and determine their potential reduction capacities with the project partners.
Discussion moments with farmers about the problem.
Demonstration of techniques.
Dissemination of the results.
Formulation of recommendations for future research.

Expected results:

Development of new practical and cost-efficient techniques for beef cattle farming.
Improved management techniques put in practice in beef cattle farms.
Lower ammonia emissions from beef cattle farms.

Results so far/first lessons:

New options for other possible techniques are being explored.
Results are being disseminated.

Who will benefit:

Beef cattle farmers.



www.aislisbon2017.com