

### MANAGEMENT OF FARMING, FOOD AND FORESTRY SYSTEMS & VALORIZATION OF THE TERRITORY

# Forest management and fire prevention



#### Parallel Thematic Session

MANAGEMENT OF FARMING, FOOD AND FORESTRY SYSTEMS & VALORIZATION OF THE TERRITORY

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Supported by: This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 665394



Start: May/2016 End: August/2018

Budget: 1.997.416 €

2020

Horizon 2020: AGRIFORVALOR : Bringing added value to agriculture and forest sectors by closing the research and innovation

Names:

divide

#### Practical

problem

There is a gap between research and innovation regarding valorisation of agriculture and forestry biomass sidestreams. AGRIFORVALOR will close it by creating multi-actor innovation partnership networks.

#### **Partners**

# Steinbeis 2I Gmbh (DE); Institute of Technology Tralee (Ie); Universiteit Gent (BE); Stichting Wageningen Research (NL); Agencia Andaluza del Conocimiento (ES); Bay Zoltan Alkalmazott Kutatasi Kozhasznu Nonprofit Kft (HU); Growabric (BE); Cooperativas Agro-Alimentarias de Andalucia (ES); Asociacion de Empresas Forestales y Paisajisticas de Andalucia (ES); Gabinete de Iniciativas Europeas Sa (ES); Teagasc - Agriculture and Food Development Authority (Ie); Feirmeoiri Aontuithe NA H-Eireann Iontaobiathe Teoranta Lbg (IE); Ibec Limited\*Irish Business and Employers Confederation (IE); Nemzeti Agrarkutatasi es Innovacioskozpont (HU); Lenduletben Az Agro-Nagy Kft. (HU)

#### Project

**Objectives:** 

Valorise biomass side streams from agriculture and forestry by facilitating knowledge transfer through "Innovative design hubs". These will enable and support farmers and foresters to exploit existing research results on valorisation technics and will facilitate bio-industry application and business model development.

**Expected results:** 

 Research and innovation agenda on agriculture and forest biomass side streams at regional and EU level;

- new operational groups for EIP AGRI;
- 3 new business models;
- interactive online side stream value tool;
- · hands-on end-user material.

Results so far/first 

Interactive online side stream value tool;

- compendium on research and innovation results;
- · innovation partnership groups in the hubs on specific topics;
- training materials.
- Project website: http://www.agriforvalor.eu

Who will benefit:

lessons:

Farmers, foresters, (bio) industry, researchers and policy makers.



Contact:Hartmut Welck E-mail:welck@steinbeis-europa.de

AGRI INNOVATION SUMMIT 2017 More information: <u>www.aislisbon2017.com</u>

eip-agri

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#### **Operational Group:**

Fogo e Invasoras.





Supported by:				
	PROGRAMA DE DESENVOLVIMENTO RURAL 2014-2020	PORTUGAL 2020	$\langle \rangle$	UNEÃO EUROPEIA Fundo Europeia Aprilota de Desenschimento Runa A Europe Investe nos Zones R

#### Aliens and Flames.

**Practical** problem

Acacia dealbata and Hakea sericea are two important fire-adapted invasive plant species in Portugal. Prescribed fire is a fuel management technique used to prevent forest fires. Unaware use of fire can promote plant invasions but an informed use may help solving this problem.

#### **Partners**

Type: Research /Teaching Agri Association Agri enterprise

Name:

Instituto Politécnico de Coimbra Associação Florestal do Baixo Vouga; Associação Florestal do Pinhal GreenClon Lda; SFERA Ultimate Lda; Silvokoala Lda; Vumba SA

#### Project

**Objectives:** 

#### To study the two-way relationships between fire and the two target invasive species. To develop best-practices to use fire as a fuel-management tool in invaded areas and as an ecosystem-management tool to control plant invasions. To disseminate the obtained knowledge among stakeholders.

Advanced knowledge on the fire ecology of invasive plants. A characterization **Expected results:** of fuel models associated with the two species. A characterization of fire behaviour in invaded areas. The possibility of forecasting the risk of invasion in burned areas. A guide of best practices for the use of fire in invaded areas, to be distributed among managers and other stakeholders.

There was a preliminary assessment of potential areas for the establishment

**Results so far/first** lessons:

of experimental plots

Who will benefit:

Forest managers and forest owners. Forest companies and service suppliers.

Training and teaching institutions.

Contact:Joaquim Sande Silva E-mail: jss@esac.pt

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Start: January/2017 End: December/2021

Budget: 465.798 €

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#### **Operational Group:**

FitoMicorrizas - Mycorrhizae Plants Prodution.

FitoMicorrizas - Produção de plantas micorrizadas.

#### **Practical** problem

Wild mushrooms production presents two main problems: - the need of new processes to optimize mycorrhization rates and selection of species with added value and tolerance to climatic changes; - an inadequate monitoring process to improve efficiency and quality of the final products.

#### **Partners**

PROGRAMA DE DESENVOLVIMENTO REAL 2014 - 2020		
	Туре:	Name:
	Research/ Teaching	Instituto Politécnico de Coimbra
	Other Company	Voz da Natureza I da : Greenclon I da
	Other Association	Associação BLC3 - Campus de Tecnologia e Inovação
	Project	
	Objectives:	Fitomicorrizas main goal is to achieve new strategies for native resources valorization, presenting new solutions to increase production efficiency of mycorrhizal plants and wild mushrooms, improving its management and aiming at the sustainability of forest systems with high environmental value.
	Expected results:	Fitomicorrizas initiative will develop an optimized micorrhization methodology through the selection of added value forestry species and native fungi strains. A support guide will be designed for production and maintenance of mycorrhizal forest plants, allowing the creation of a producers group, which will receive an added value co-product and higher quality forest plants, increasing their profit.
FUNGO	Results so far/first lessons:	<i>Castanea</i> and <i>Arbutus unedo</i> plants were mycorrhized with <i>T. borchii</i> and <i>L. deliciosus</i> and were established in field trials. These symbioses increase the resilience of plants to the climatic changes and stresses, such as water and nutrients uptake and the inherent increase of plants vigor and resistance to diseases, allowing the creation of a product with an add value for forest producers.
Start: May/2017 End: December/2021		
	Who will benefit:	Forest owners, their associations, sectors linked (cork) and also the mycological sector.
Budget: 429.389 €		
		Contact: Inês Ferreira E-mail:ines.ferreira@blc3.pt
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#### Supported by PROGRAMA DE DESENVOLVIMENTO DE DAL 2014-2020 PORTUGAL 2020 Fundo Europeu Agricola de Desenvolvemento Runa





Start: January/2017 End: December/2020

Budget: 444.857 €

#### **Operational Group:**

GI (PIN) – Integrated management of pine forest / Pinewood nematode

GI (PIN) - Gestão Integrada do Pinheiro Bravo / Nemátode da Madeira do Pinheiro

Name:

FIREMAP

#### **Practical** problem

At present, there are several obstacles to the containment of pinewood nematode (PWN), Bursaphelenchus xylophilus, which contribute to the progression of pine wilt disease (PWD) and the consequent loss of economic value for forest landowners and for the pine industry.

FNAPF - Federação Nacional das Associações de Proprietários Florestais;

Florgénese, Lda.; FLOPONOR - Florestas e Obras Públicas do Norte, S.A Instituto Nacional de Investigação Agrária e Veterinária, I.P.; Instituto da Conservação da Natureza e das Florestas, I.P; Universidade de Coimbra

Associação para a Valorização da Floresta de Pinho - Centro PINUS

#### **Partners**

Type:

Agri association Agri enterprise

Research/ Teaching

Other enterprise

#### **Project**

**Objectives:** 

This project aims to overcome the constraints caused by PWD, combining new forms of forest management, fight, methods of early detection of infected trees and decrease their impact, control the natural dispersion of the insect vector (Monochamus galloprovincialis), reduce costs of disease control actions and contribute to restore the confidence of landowners for the maintenance, plantation and management of new areas of maritime pine.

It is also intended to analyze the types of trees that can be infected, the influence of forest fires on the natural dispersion of PWN, to evaluate the emergence and flight of the vector under different climatic conditions, to minimize the risk of forest operations during their flight period and to create zones of active containment where it is possible to act more effectively to avoid the dispersion of PWN to the non-infected pine forests.

Specific strategic plan to contain the disease; **Expected results:** Management practices appropriate to improve the phytosanitary status of the pine forest; Methods of early assessment of potentially infected trees; Assessment of the risk, distance and duration of attractiveness of pine forest areas covered by fire; Calculation of the risk of PWN infection in pine trees of different ages and dimensions or in decline due to other biotic and abiotic agents; Evaluation of the emergency period and vector flight in different climatic conditions. This project relies on public funding, which approval is recent, making it **Results so far/first** impossible to present preliminary data. lessons: Who will benefit: The forest owners are the direct beneficiaries, as well as public entities of research and indirect administration of the State and financial agents that intervene in the valorization of the sector of the maritime pine. Contact: Telma Briote

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AGRI INNOVATION SUMMIT 2017 More information: www.aislisbon2017.com E-mail:geral@fnapf.pt





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Budget: 316.375 €

#### **Operational Groups:**

#### GOTECFOR - Technology for the mobilization and use of Forest Biomass in agro-industry.

GOTECFOR - Tecnologia para a mobilização e aproveitamento de Biomassa Florestal na agroindustria.

## **Practical**

problem

The main problem is the lack of economically viable solutions that allow agro industries to reduce energy costs for heating. This operation will act in the optimization of forest biomass mobilization; adequacy the equipment for this purpose; optimization of the burning processes of forest biomass.

#### **Partners**

Туре:	Name:
Agri association	Forestis - Associação Florestal de Portugal
Research/Teaching	INESCTEC - Instituto de Engenharia de Sistemas e Computadores, Tecnologia e Ciência; INEGI - Instituto de Ciência e Inovação em Engenharia Mecânica e Engenharia Industrial
Agri enterprise	Floresta Jovem, Lda; Sérgio Domingos Azevedo Alves

#### **Project**

Who will benefit:

Objectives:	Promoting integral management of forest resources and valuing residual products; Increase the productivity of agroforestry activities; Reduce costs of productive activities in protected crops (heating needs); Promote the use of more efficient and safer machinery in the forest Portuguese context.
Expected results:	Prototype of a software to optimize the forest biomass supply chain; Operational model for the use of biomass applied to a real case; Organizational models for the mobilization of forest biomass; An innovation roadmap for forestry machines for Portuguese industry. It is expected to influence the capacity of the sector, increasing the level of competitiveness and efficiency of production processes.
Results so far/first lessons:	The existence of a wide variety of operational conditions, as well as the type of forest biomass that is available in our forests, many of which do not have a current use (like shrubs), are demanding a higher requirement in the analysis of the starting point. On the other hand, the aspects related to the processing of forest biomass in the field are critical to the viability of its use.

Forest producers, forestry sector service providers, agroindustry and biomass plants will be the main beneficiaries.

> Contact: Ricardo Marinho E-mail:geral@forestis.pt

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Fundo Europeia Fundo Europeu Apricola de Desenvolumento Rural







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Thüringen	Ministerium für infrastruktur und Landwirtschaft	Freiseinaries Lamber lander landerster in Theinare Freiseinaries Lamber lander landerster in Theinare Gele Ertwicklung des Ländlichen Mauries	

#### Operational Group:

New aspects of micropropagation of fruit and other deciduous trees Neue technologische Ansätze zur effektiven Vermehrung von Obst- und anderen Laubgehölzen

	Practical	
	problem	There is a demand for fast growing trees producing high value timber. Selected clones (e.g. cherry trees) have to be tested for their superior quality. Micropropagation, which is the only tool to produce these trees, is a labour- intensive method and needs to be optimized by a new technology.
	Partners	
	Туре:	Name:
	Tree and horticultural nursery companies	Baumschulen Oberdorla GmbH Vogtei; TM Zierpflanzen GmbH Mühlhausen
	Forest research stations	Staatsbetrieb Sachsenforst Pirna; ThüringenForst Gotha
	Advisory service	Arand Unternehmensberatung Mühlhausen
	Project	
	Objectives:	Propagation of selected clones of cherries and aspen for field trials. Field trials to demonstrate the superior quality of the clones. Optimization of different steps in micropropagation by using multiwell culture trays and application of LED illumination for growth stimulation.
	Expected results:	Forest owners become convinced to plant fast growing superior trees by field trials. Efficiency of micropropagation is increased by higher propagation rates. Work during greenhouse transfer and acclimatization is reduced by using new culture trays for rooting the cuttings. Work peak is reduced by storage of rooted plantlets. Changed culture parameters are estimated in order to adapt the technology.
	Results so far/first lessons:	About 120 clones of fast growing trees selected by tree breeding stations were established in vitro and a first set of plantlets were produced. Forest trials of registered clones were just planted. Tissue culture trays developed for the propagation of fern plants were adopted to cherry tree clones. Trays filled with different materials were tested in combination with different LED illumination.
	Who will benefit:	Forest owners, forest research stations which have no facilities for micropropagation and companies working on micropropagation.
Start: 01/01/2016 End: 31/12/2018		
Budget: 168.000 €		Contact: Hardy Dembny E-mail: h.dembny@baumschulen-oberdorla.de
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More information: www.aislisbon2017.com

### FOREST MANAGEMENT AND







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PROGRAMA DE XESENVOLVIMENTO ZURAL 2014-2020

# Operational Group: OakRegeneration - The reassessment of regeneration strategies in

the Mediterranean scattered-oak woodlands. OakRegeneration - Reavaliação das estratégias e modelos de gestão para a criação e manutenção de áreas de regeneração natural de povoamentos dispersos de sobreiro e de azinheira.

	Practical	
	problem	The lack of successful (long-term) natural tree regeneration is recognized as a major problem on Mediterranean scattered-oak woodlands. There is a pressing need to improve woodlands management practices to properly regenerate oaks.
	Partners	
	Туре:	Name:
AL UNAO EUROPEIA	Research/ Teaching	INIAV - Instituto Nacional de Investigação Agrária e Veterinária, I.P.
	Agri association	ANSUB - Associação de Produtores Florestais do Vale do Sado; AFLOSOR - Associação de Produtores Agro-Florestais da Região de Ponte de Sor; ACHAR - Associação de Agricultores de Charneca; ADPM - Associação para o Estudo e Defesa do Património Natural e Cultural do Concelho de Mértola
	Agri enterprise	CL - Companhia das Lezírias, S.A.; EDIA - Empresa de Desenvolvimento e Infraestruturas do Alqueva, S.A.; Herdade do Paúl - Sociedade de Gestão Rural, Unipessoal Lda; Anta de Cima - Sociedade Agrícola Unipessoal Lda; Pedro Sacadura Teixeira Cabral Duarte da Silveira; César Sacadura Mexia de Almeida; Carlos Frederico Abecassis do Amaral Neto; Sociedade Agrícola do Casal das Pombas, S.A.
	Project	
	Objectives:	The reassessment of regeneration strategies in the Mediterranean scattered- oak woodlands by:
		Detecting and making use of trees natural regeneration hotspots and; Creating conditions to favor a successful natural oak regeneration process, on appropriate areas.
	Expected results:	Understanding on oak natural regeneration dynamics in Mediterranean scattered-oak woodlands:
		Growing knowledge about planning and managing scattered-oak woodlands to naturally regenerate;
		Being able to prescribe with certainty management practices to increase the success of oak natural regeneration;
		Increasing oak natural regeneration hotspots areas in Mediterranean scattered-oak woodlands.
Control de cosa	Results so far/first lessons:	Operational Group.
	Who will benefit:	Forest owners and managers;
ber/2017 ber/2021		Society as a whole.
.000 €		
		Contact:Augusta Costa

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of the programme Pour et Sur le Développement Régional (PSDR4 Rhône-Alpes rgs from INRA, Rhône-Alpes Region, Irstea and the European Union through the art of the Européen Partnership for Innovation (IEP-AGRI). CO ISMERE BINRA AhoneAlipes (R)





Start: 01/10/2015 End: 30/09/2019

Budget: 900.000 €

Funded by Commission

#### **Operational Group:**

OUI-GEF : Innovative tools for collaborative forest management OUI-GEF - Outils innovants pour une gestion concertée des forêts : de la superposition des usages au projet territorial

#### Practical The OUI-GEF Operational Group aims at developing technical and problem organizational innovations that help building territorial forest strategies. In a context of increasing pressure on wood resources, it should promote a sustainable management that ensures a diversity of ecosystem services. **Partners** Type: Name: Research institutes IRSTEA Mountain Ecosystems and Mountain Territories Development Research Units; ESPACE (Aix Marseille University, Avignon University, Sophia Antipolis University and CNRS) and EDYTEM (Savoie Mont Blanc University and CNRS) mixed research units Office National des Forêts (ONF); Institut de Développement Forestier (IDF); Forest management Centre Régional de la Propriété Forestière (CRPF) organisations Regional authorities Natural Regional Parks (Chartreuse, Massif des Bauges and Pilat) Project **Objectives:** Develop innovative methods to assess forest structure parameters. Develop operational tools to assess ecosystem services. Foster a common culture on forests and forestry at a local scale, by a fair sharing of knowledge that promotes collaborative forest planning and local development. Expected results: Thematic maps on forest parameters and ecosystem services (wood production, protection against natural hazards, forest maturity). Comprehensive analysis of existing local wood supply chains to diagnose their sustainability Multifunctional set of indicators to assess the quality of logging operations. Shared base of metadata including complementary data sources for forest projects development. Results so far/first Protection against snow avalanches and rockfalls thematic maps. Field methodology to quickly assess forest maturity at a local scale. lessons: Shared multifunctional set of indicators to assess the quality of logging operations. Census and first diagnostic of local wood supply chains. Analysis of data and data fluxes involved in a collaborative local forest development project. Forest managers, local development structures (i.e regional parks) and wood Who will benefit: transformation industries. Contact:Marc Fuhr

E-mail:marc.fuhr@irstea.fr

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### Operational Group: SHORT-ROTATION COPPICE: an opportunity for future regional bio-refineries?

Les taillis à courte rotation : une opportunité pour les futures bioraffineries régionales ?

Practical problem       Lack of agronomic reference about the feasibilit the short-coppice rotation (with Acacia, Eucalyp poplar, willow) under Mediterranean climate in l ands.         Image: Partners       Partners         Image: Project       Alliance forestiere         Multi production       Arterris         Development farmers organisation       Chambres d'agriculture de l'Aude et des Pyréme roganisation         Research and lechnical institute       FCBA-Foret bois cellulose ameublement         Project       Objectives:         Objectives:       Increase knowledge on the productivity of som could be interesting in Mediterranean condition Elaboration of factsheets on the species: economic aspects.         Create a network of trials covering the regions solls.       Expected results:       For Robinier (Acacia), Eucalyptus, poplar, wil costs.         To give advice on the opportunity (or not) to ha and how to integrate them (guidelines).       To incentivize future local bio-refineries to to productive.         Results so far/first lessons:       As the last harvest has been made at the end quality of the products.         Who will benefit:       Farmers.	
problem       Lack of agronomic reference about the feability the short-coopie or totation (with Acaia, Eucary poplar, willow) under Mediterranean climate in lands.         Image: I	
Patters   Image: Specific Sp	y, the yield and the quality of otus and, in some location, <sup>−</sup> rance and also on marginal
Type:       Name:         Image: Sector S	
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Image: Section 1       Multi production cooperative       Arterris         Image: Section 2       Development farmers organisation       Chambres d'agriculture de l'Aude et des Pyrine         Image: Section 2       Development farmers organisation       CBA-Foret bois cellulose ameublement         Image: Section 2       Digectives       Increase knowledge on the productivity of som coonditions         Image: Section 2       Digectives:       Increase knowledge on the productivity of som coonditions         Image: Section 2       Digectives:       Increase knowledge on the productivity of som coonditions         Image: Section 2       Digectives:       Increase knowledge on the productivity of som coonditions         Image: Section 2       Digectives:       Increase knowledge on the productivity of som coonditions         Image: Section 2       Digectives:       Increase knowledge on the productivity of som coonditions         Image: Section 2       Digectives:       Increase knowledge on the opportunity of som coonditions         Image: Section 2       Expected results:       For Robinier (Acacia), Eucalyptus, poplar, wit costs.         Image: Section 2       Results so far/first       As the last harvest has been made at the end quality of the products are not available yet.         Image: Section 2       Who will benefit:       Farmers.         Image: Section 2       Who will benefit:       Farmers.<	
Development farmers organisation       Chambres d'agriculture de l'Aude et des Pyréne d'agriculture des Pyréne d'agriculture des perses d'agriculture des Pyréne d'agriculture des Pyr	
Research and technical istitute       FCBA-Foret bois cellulose ameublement         Project       Project:         Objectives:       Increase knowledge on the productivity of som could be interesting in Mediterranean condition. Elaboration of factsheets on the species: economic aspects. Create a network of trials covering the regions oils.         Expected results:       For Robinier (Acacia), Eucalyptus, poplar, wi costs. To give advice on the opportunity (or not) to ha and how to integrate them (guidelines). To incentivize future local bio-refineries to u productive. Knowledge transfer.         Results so far/first lessons:       As the last harvest has been made at the end quality of the products are not available yet. We need to have both yield but also - and it's of those products.         Who will benefit:       Farmers.	ées-orientales
Image: State Stat	
Objectives:       Increase knowledge on the productivity of som could be interesting in Mediterranean condition. Elaboration of factsheets on the species: economic aspects.         Objectives:       Create a network of trials covering the region: soils.         Expected results:       For Robinier (Acacia), Eucalyptus, poplar, wi costs.         To give advice on the opportunity (or not) to ha and how to integrate them (guidelines).       To incentivize future local bio-refineries to uproductive.         Knowledge transfer.       Results so far/first lessons:       As the last harvest has been made at the end quality of the products are not available yet.         Who will benefit:       Farmers.	
Image: State of the state	e short-coppice rotations whic s. agronomy, yield, quality, in s varied climate conditions ar
Results so far/first lessons:       As the last harvest has been made at the end quality of the products are not available yet. We need to have both yield but also - and it's of those products.         Who will benefit:       Farmers.	llow: yield, agronomy, harves ve those species in the rotatic use these species if they an
Who will benefit: Farmers.	of July 2017, the results of th the most important - the quali
01/01/2016	
31/12/2018	
ət: 57.432 €	
Contact: Anne. E-mail: anne.	Boutitie poutitie@Irmp.chambagri.fr



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