

# ***EUROPRUNING:***



Development and Implementation of a new  
and non- existent logistics chain for biomass  
from Pruning.

**FIMA, Zaragoza. 17<sup>th</sup>  
February 2016**

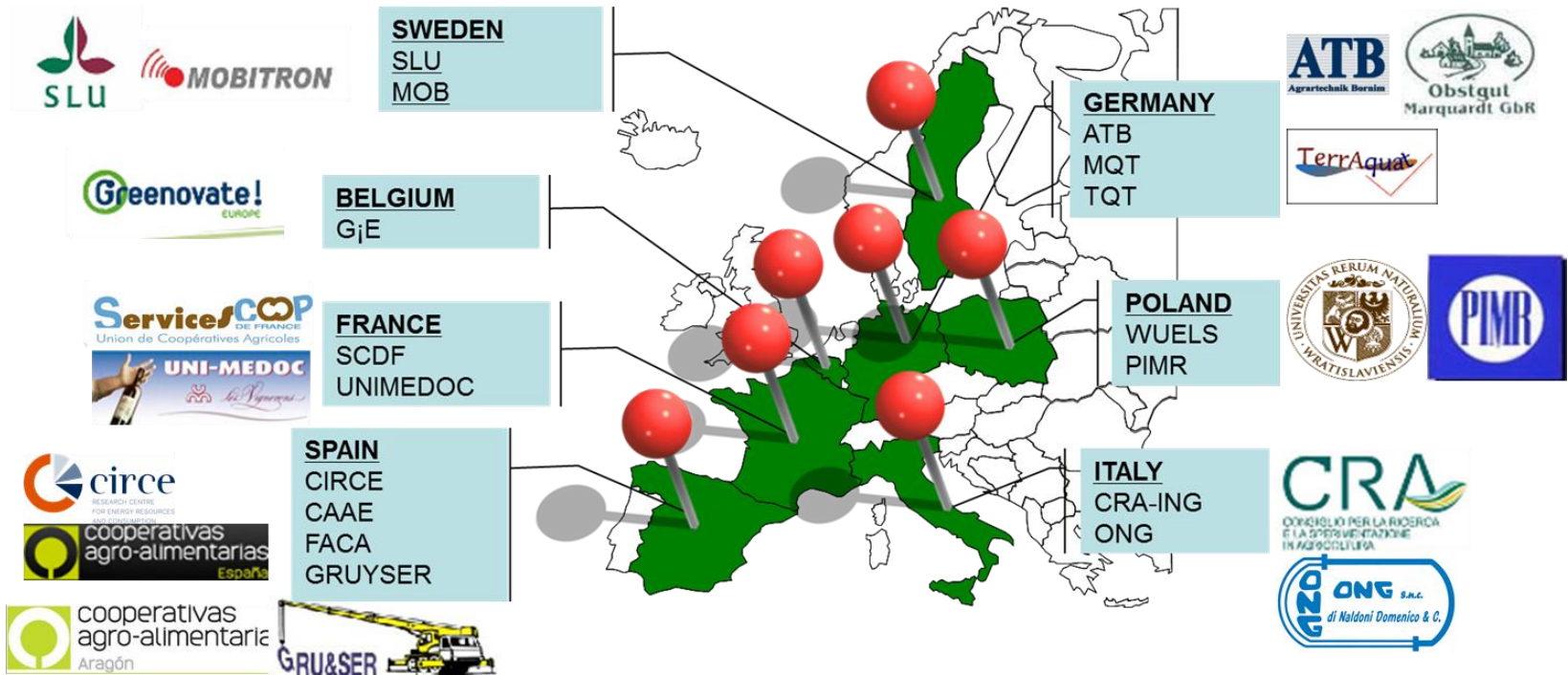
## **International Conference FIMA-EurAgEng**

New Technologies in Agricultural Machinery and Equipment for a  
Competitive and Sustainable Agriculture

**Jesús Abadías (CAA)**



# EUROPRUNING: CONSORTIUM



**Sixteen Partners**  
**Seven Countries**





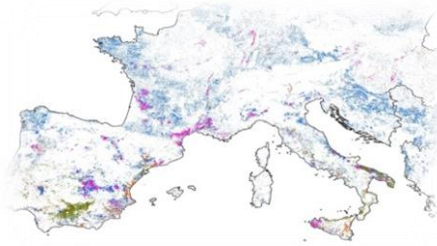
# MAIN AIM: BRANCHING OUT TO NEW BIOENERGY SUPPLIES

## Technical barriers

Heterogeneous planting pattern and obstacles



Scatter resources



Low collecting efficiency

Not always adequate format for handling and energy use



**High costs!!**

## Solutions: *PROJECT GOALS*



New machinery development optimized for pruning collection preserving quality



Smart logistics and cost-effective transportation



Best practices for pruning handling, storage and quality management



Sustainable soil management. Pruning as a biofuel or as soil improving matter?



Social, economic and environmental costs. Business models



Demo-sites: Aragón (Spain), Bordeaux (France) and Satzkorn (Germany)



**Optimization to achieve profitability!!**





# Project MAIN STEPS

## > Quality requirements definition and their evolution assessment



- Size
- Moisture content
- Lower heating value
- Ash content







# Project MAIN STEPS

## > PROTOTYPES DESIGN AND CONSTRUCTION



### Baler PRB 1,75

- Standardized bales ( $\phi=1.2\text{m}$ ;  $L=1,2\text{ m}$ )

Industrial Institute of  
Agricultural Engineering  
(Poznan, POLONIA)



### Chipper PC50

- P45.
- 4 different logistics approaches

Officina Naldoni  
s.n.c. (Castel  
Bolognese, ITALIA)





# Project MAIN STEPS

## >DEMOS

- Spain (almond, peach, olive tree and vineyard)
- France (vineyard)
- Germany (apple tree and cherry)



cooperativas  
agro-alimentarias  
Aragón



# Spanish Demo: PIMR PRB Baler – (Alcañiz, Almond)







# Spanish Demo: PC50 chipper (CALANDA, Peach tree)







# Spanish DEMO: BIOMASS 100 SERRAT (ESCATRON, Olive)

## Intensive olive tree plantation (6x5 m)







# Spanish DEMO: Up-rooted trees, Shear cut and commercial forest chipper (Fraga)





# FRENCH DEMO: SOUSLIKOFF and adapted shredder machinery (MEDOC, VINeyard)







# Project MAIN STEPS

## > STORAGE

- Three locations: Spain (Zaragoza), France (Medoc) and Germany (Satzkorn).
- Moisture and temperature monitoring
- Gaseous emissions during storage
- Analysis during construction and dismantling
- Quality evolution during storage





# Project MAIN STEPS

## >SOILS MONITORING

- Three locations: Spain (Teruel), France (Medoc) and Germany (Satzkorn).
- Soils analysis
- CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O emissions assessment in mulched and not mulched plots
- Nitrates leaching evaluation in mulched and not mulched plots
- Erosion effects control







# Project MAIN STEPS

- > TRANSPORT
- > LCA
- > LCCA
- > SOCIAL ASSESSMENT
- > BUSINESS MODELS







# Opportunities that this project generates to our entity

- > To obtain information about new business opportunities for our cooperatives and farmers
- > To look for solutions for the waste management, such as the pruning that is generated by agricultural exploitations
- > To look for information to improve social, environmental and economic aspects for the cooperatives and agricultural exploitations.
- > To generate synergies with other companies and research institutes in order to search for future business opportunities.



# Thank you very much



cooperativas  
agro-alimentarias  
Aragón

El futuro de la alimentación está en nuestra mesa



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