TRIGGERING THE CREATION OF BIOMASS LOGISTIC CENTRES BY THE AGRO-INDUSTRY

SUCELLOG project (IEE/13/638/SI2.675535)

April 2014 - March 2017

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This project is co-funded by the European Commission, contract N°: IEE/13/638/SI2.675535

Aim and contents of the presentation

Aim of the presentation:

To inform EU multiplier organisations (in particular associations related to the specific agro-industries addressed by the project) about SUCELLOG project and to engage them in project activities.

Contents:

- Introduction to SUCELLOG project and opportunities it offers to CEEV members:
  - Project summary
  - Background
  - Objectives and main steps
  - Partnership and regions
  - Technical support to agro-industries
  - Presentation of case studies in vineyard pruning residue utilization
  - Opportunity to receive information and training
- Discussion of technical and non-technical challenges and barriers
- Discussion of interest for further cooperation

Project Summary

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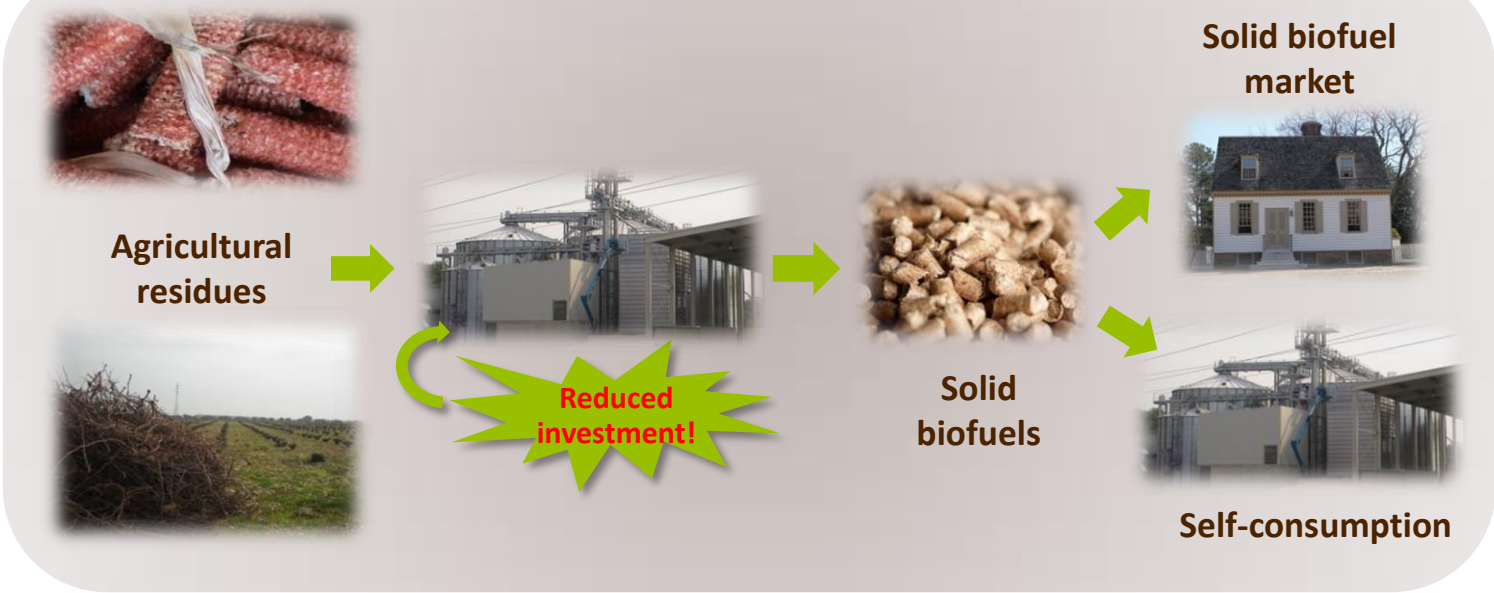
AGRO-INDUSTRIES as SEASONAL BIOMASS LOGISTIC CENTRE

Usual operation
(Nov-Feb)

Operation as biomass logistic centre
(Mar-Oct)



Background

European energy scenario needs

New solid biofuels to fulfil demand

European agricultural sector needs

To diversify business activity

Take advantage of important SYNERGIES between bio-economy and the agro-industry sector

- Compatibility with existing equipment/facilities for conditioning of raw biomass
- Work under seasonal regime
- They produce residues or surrounded by residues
- Experience with organic feedstocks
- Concern about product quality

Let's adapt agro-industries to operate as logistic centres of quality solid biofuels with low investment

Objectives and main steps

SUCELLOG goal is to **foster the participation of the agrarian sector in the supply of sustainable solid biofuels**.

SUCELLOG will make it by:

- **Providing technical support, helping decision-making and accompanying agro-industries** willing to start operating as solid biofuel logistic centres.

- **Creating capacity building** in regional and national agrarian associations to provide this service to their associates beyond the end of the project.

Main areas of interest: Spain, France, Italy and Austria

Partnership

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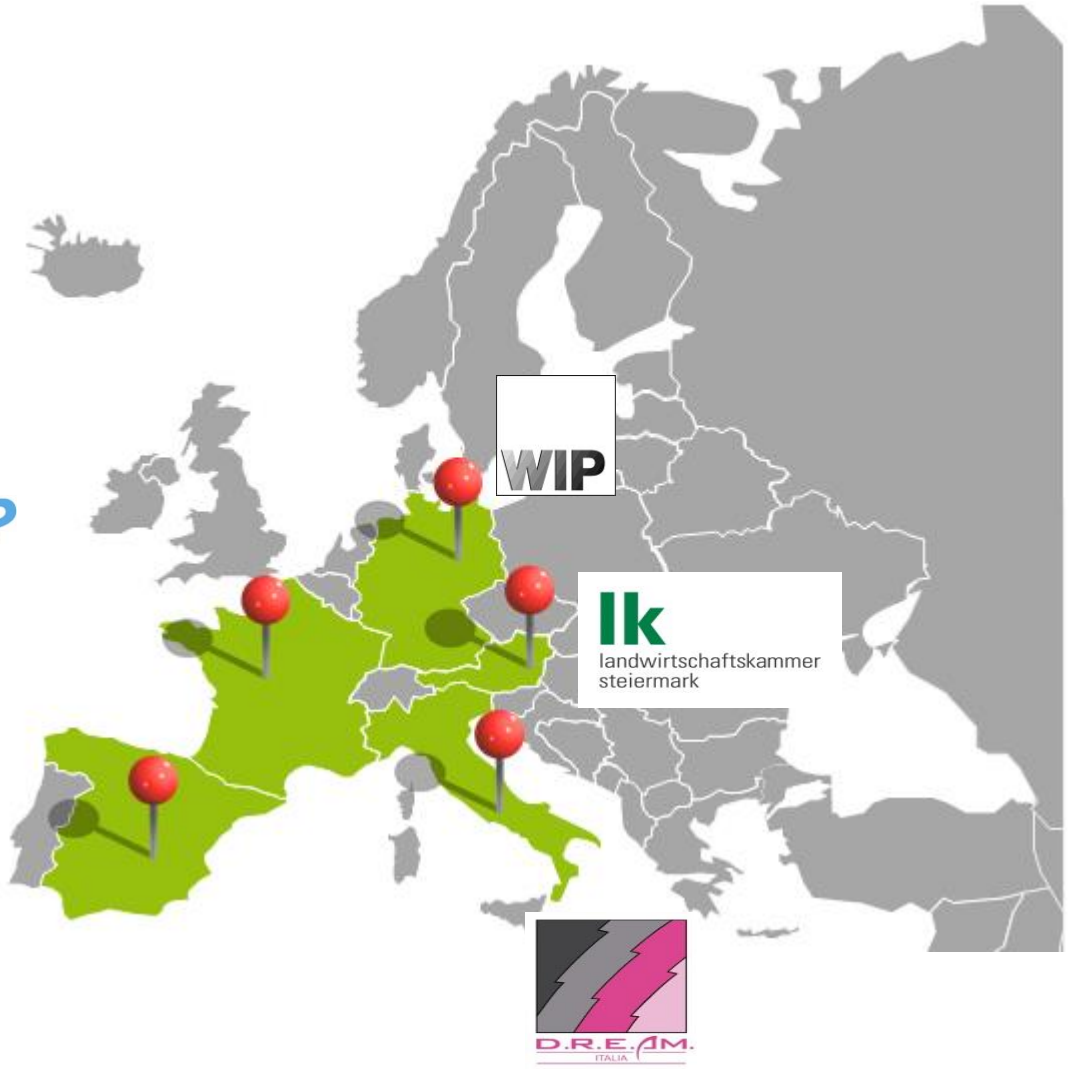


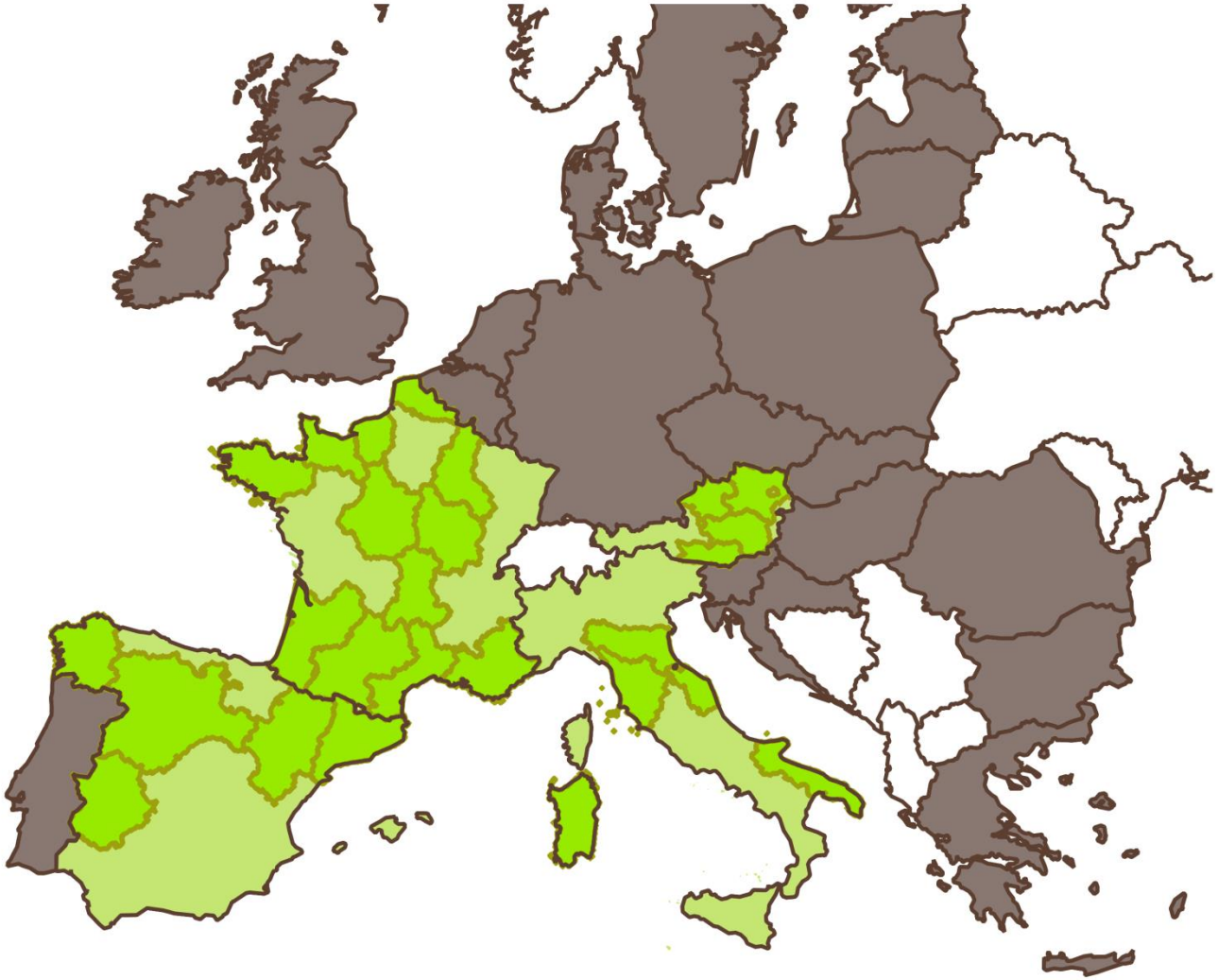
R·A·G·T ENERGIE

Services COOP DE FRANCE
Union de Coopératives Agricoles

circe
RESEARCH CENTRE
FOR ENERGY RESOURCES
AND CONSUMPTION

agri-food cooperatives
Spain
>we are future

SUCELLOG Regions



Technical support to agro-industries

The SUCELLOG project **supports 4 agro-industries in Europe to become biomass logistic centres using agricultural residues as raw material**. A feasibility study and a complete business model have been conducted for them.

The selected agro-industries are:

- **Cooperativa Agraria San Miguel** - Aragón region - Spain
- **Luzéal-Saint Rémy** – Champagne-Ardenne region - France
- **Società Cooperativa Agricola Le Rene s.r.l.** – Toscana region – Italy
- **Tschiggerl Agrar Gmbh** – Styria region – Austria

More agro-industries have been supported by providing auditing services and expert consultations within the project. Some case studies…

Examples of the utilization of vineyard prunings

Prepared in collaboration with EuroPruning and uP_running projects

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What is done with prunings now?

Agrarian residues

Agricultural Pruning

Plantation removal

USUAL management or DISPOSAL

Disposal in open air fires

Mulching to soil

How to make this initiative successful?

Agrarian residues → **ENERGY**

The key:
Every supply chain stakeholder must have a benefit

Farmer

ECONOMIC
- Sells wood
- Reduce pruning management cost
- Reduce gasoil

NON ECONOMIC
- Saves time
- Avoids bothering operations
- Avoids open-fire permits

Trader / service company

ECONOMIC
- Obtain a margin of benefit

NON ECONOMIC
- Diversify their activity
- Possibility of integrated contract(pruning + collection)

Transporter

ECONOMIC
- Obtain contracts

NON ECONOMIC
- Diversify their activity
- Possibility of integrated contract (fruit + pruning wood)

Consumer

ECONOMIC
- Biomass at lower price

NON ECONOMIC
- Diversify the energy resources
- Increase competitiveness
- Marketing strategy

In any case…

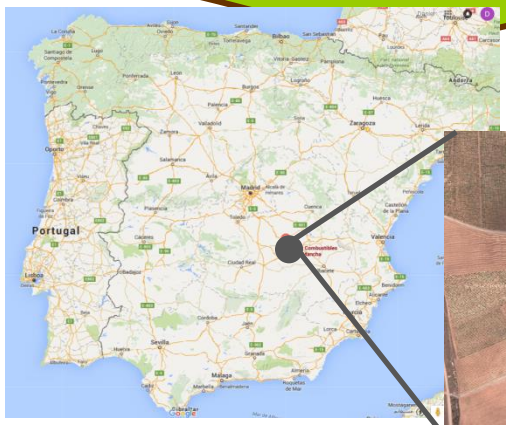
Prunings are competitive with forest resources because they are produced every year, always in the same place and with the same quantities

Key of success:

- ✓ The farmer becomes aware that it saves time avoiding burning and asking for permits

Case 1: **PELLETS DE LA MANCHA**

- Industrial production from 2011
- The only plant in the world working industrially on vineyard prunings
- Maximum capacity 20,000 t/yr (pellets and chips)
- 30,000 ha in a radius of < 30 km



Case 1: PELLETS DE LA MANCHA

EXPERIENCE: PELET, COMBUSTIBLE DE LA MANCHA

Pelets, combustible de la Mancha is a company producing solid biomass from vineyard prunings sited in the region of Castilla la Mancha (Spain). With a maximum capacity of 20,000 tons per year, they represent the only industrial facility in Europe working with this type of residue. They supply pellets and chips to industries and the tertiary sector in a radio of up to 300 km.

The plant is placed inside an area of high density of vineyard plantations. The resource is gathered from a surface of 30,000 hectares (mostly small fields) around 30 km maximum. Before the pellet facility was settled, the common practice followed by the farmers was to store the pruning branches at the side of each field to be burnt in the open-air. Currently, the company offers them to pick-up the material once stored, so that farmers save time from the burning process and from all the administrative permits that they had to request. The perception of saving time from the farmer has been crucial for the development of this business line.

The pellet and chips from vineyard prunings present a competitive price in the biomass market in the area compared to the forestry resources. This advantage is not because the resource is obtained for free from the farmers, since the material coming from agricultural practices usually requires to be cleaned from exogenous matter while the forest resource do not normally need such an intense conditioning. **The fact that the resource is produced every year, in the same quantities and at the same distance from the pellet plant is the characteristic that makes it competitive with forest wood products.**

Case 1: PELLETS DE LA MANCHA

Chain type 1

Manual cutting. Align to facilitate collection	With fork to field side	Open air storage (2-3 months)	Transport of bulk branches	Reception at plant, chipping, screening, drying, pelletizing
				

Saves money and time in pruning management

Gets profit margin

Case 1: **PELLETS DE LA MANCHA**

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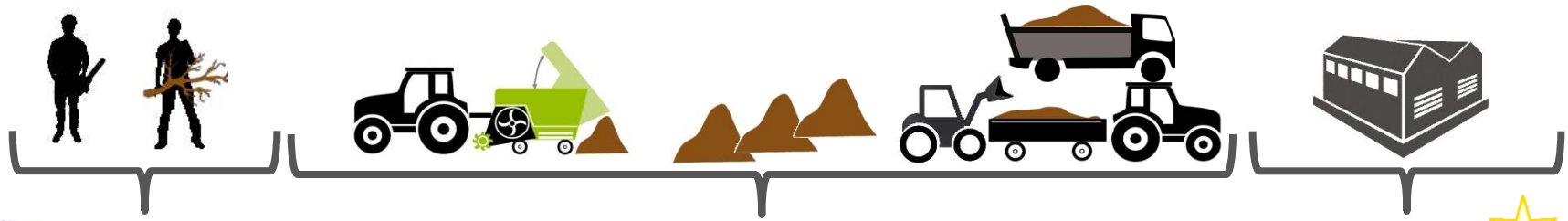
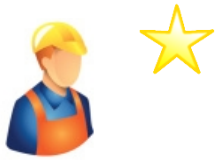
Chain type 2:

Manual cutting. Align to facilitate collection	Integrated collection and shredding	Short time storage at field side	Transport of shredded material	Reception at plant, chipping, screening, drying, pelletizing



Saves money and time in pruning management



Diversifies their economy

Gets profit margin

Gets profit margin

Case 2: **BODEGAS EMINA**

- Working with biomass from 2012
- 250 kW Boiler – for fermentation process and the offices
- 10 % fed with vineyard pruning chips
- 550 ha vineyards – 1 t/ha of prunings

Sarmientos triturados con trituradora de martillo

Case 2: **BODEGAS EMINA**

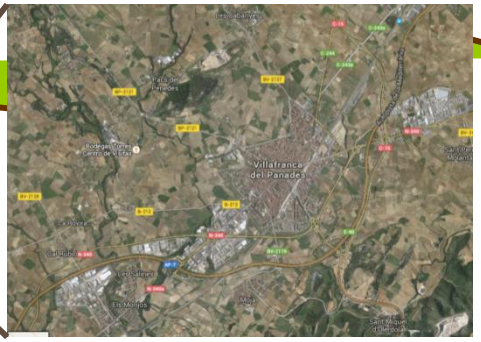
Chain type 3

Manual cutting. Align to facilitate collection	With fork to field side	Storage as branches	Shredding on the field side	Transport, storage of chips and self-consumption
				

Saves money and time in pruning management

Saves in fossil fuels = Marketing (reduced carbon footprint of the company)

Case 3: **Vilafranca del Penedés**



- 40,000 inhabitants
- Area of high density of vineyard
- The council initiated dialogue among:

Farmers, company of agricultural services and cluster of caves

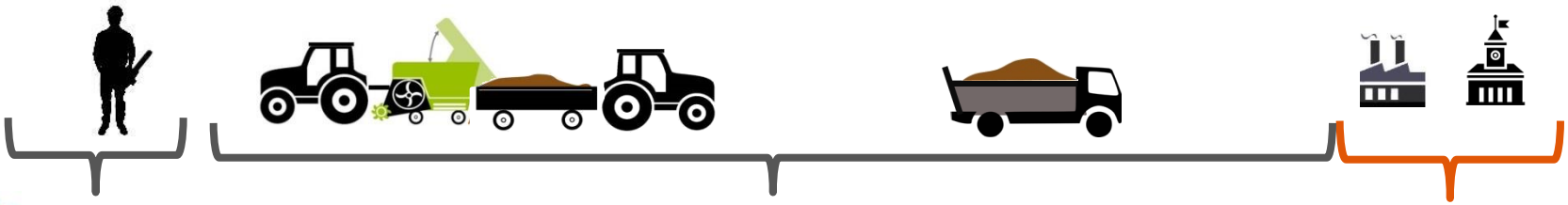
Result: 1 cave (75 kW) heated and a small district heating (500 kW) operated with pruning chips

http://vineyards4heat.eu/

Case 3: **Vilafranca del Penedés**

Chain type 4:

Manual cutting	Integrated collection. Download directly on a trailer	Storage. Treatment (if needed) and delivery	Delivery to final consumers



Saves money and time in pruning management

Diversifies their economy

Gets profit margin

Savings in fossil fuels

Case 3: **Vilafranca del Penedés**

Chain type 5:

Manual cutting	Integrated pruning + collection + chipping. Download directly on a trailer	Storage and delivery	Delivery to final consumers

Saves money and time in pruning management

Diversifies their economy

Get a benefit margin

Savings in fossil fuels

No commercial machinery. System developed with a company

Case 4: **Bodegas Torres**

Chain type 6:

Manual cutting	Integrated collection. Download directly on a trailer	Storage. Treatment (if needed) and delivery	Delivery to final consumers

Saves time in pruning management

Pay 40 €/ha to the logistic operator

Diversifies their economy

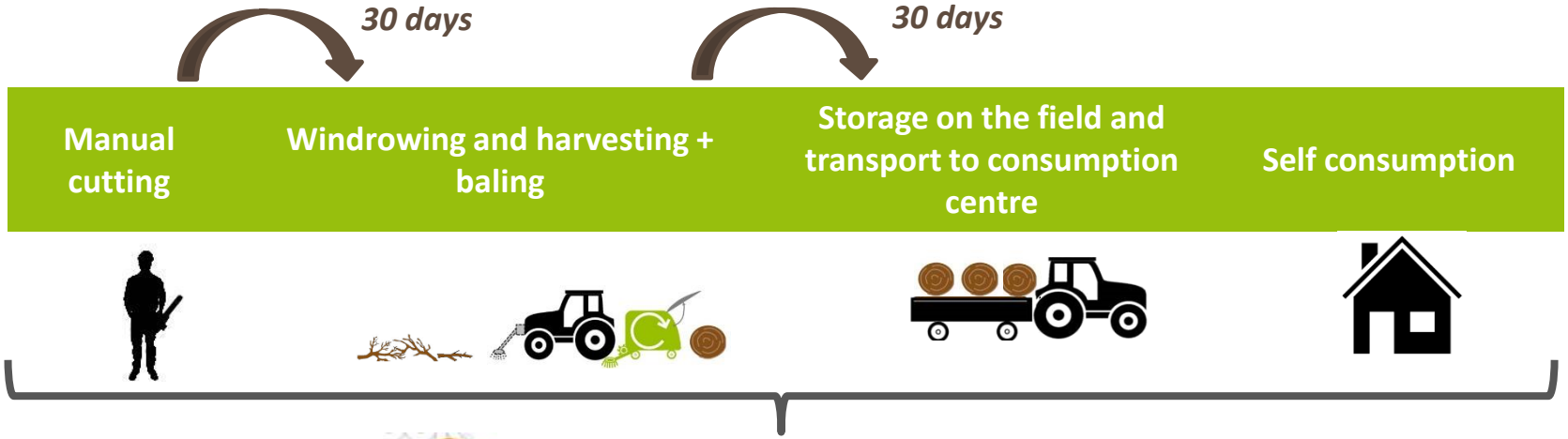
Get a benefit margin

Savings in fossil fuels

Case 5: **Xavier Muller (farmer)**

- 25 ha – 2 t/ha (50 t/yr)
- Problems with diseases
- Self-consumption use

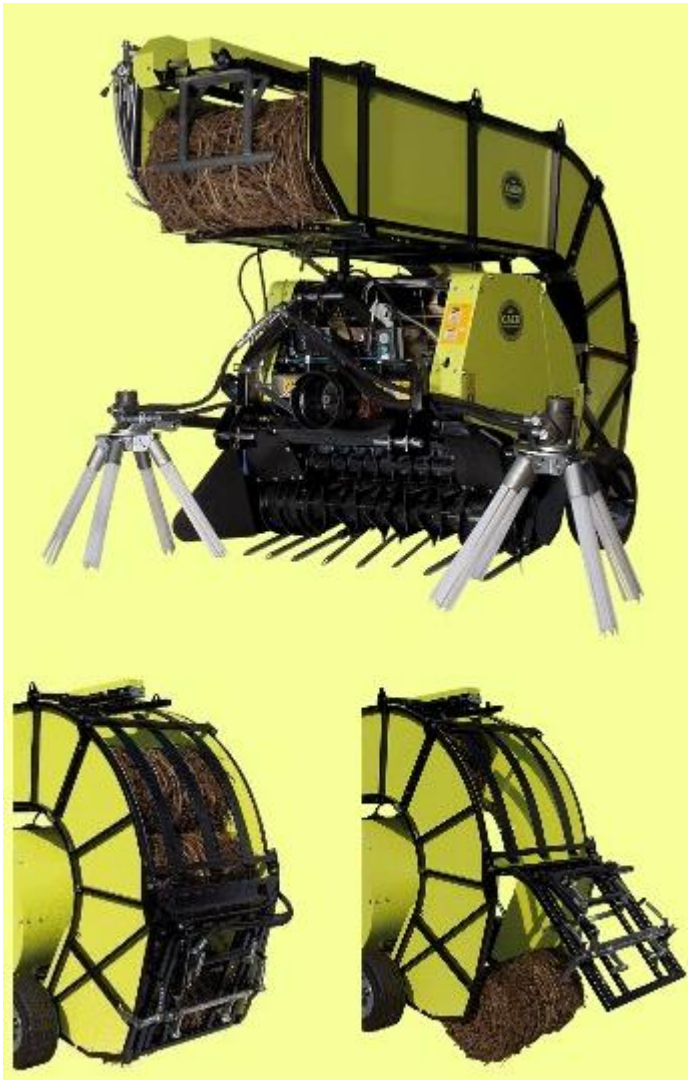
Chain type 7:



Saves money and time in pruning management

Saves money in fossil fuels

New machinery in the market:



Bales 55 * 52 cm

Trainings to agrarian sector

Regional agrarian associations have received specific training on how to make technical and economic feasibility study of an agro-industry willing to become a biomass logistic centre:

- 9 & 14 February 2016 in Paris, France
- 4 March 2016 in Böheimkirchen, Austria
- 29 - 30 March 2016 in Valladolid, Spain
- 20-22 April2016 in Florence, Italy

International 3 days training course will be organised by CIRCE for AGRARIAN ASSOCIATIONS in EU-28.

The training will include following topics:

- Concept of logistic centre
- Experiences in Europe (case studies and business cases)
- How to support an agro-industry willing to become a logistic centre

Make your request: http://www.sucellogconsultationtool.com

Results:

Potential of available biomass in project regions and the existing agro-industries compatible with the production of solid biomass

DOWNLOAD THE REPORT ON REGIONAL SITUATION, BIOMASS RESOURCES AND PRIORITY AREAS

Key messages to bear in mind when evaluating the possibility to become a biomass logistic centre

DOWNLOAD THE HANDBOOK WITH BASIC INFORMATION

ALREADY AVAILABLE AT

www.sucellog.eu

Available languages:
DE, EN, ES, FR, IT

Checking the potential of becoming an agro-industry logistic centre

DOWNLOAD THE DIAGNOSIS GUIDE

Real feasibility studies made to 4 agro-industries that benefit from project services

DOWNLOAD THE FEASIBILITY STUDIES & BUSINESS MODELS

Main steps to make a techno-economic study on how to build a logistic centre in an agro-industry

DOWNLOAD THE 2nd HANDBOOK

Challenges and barriers

What do you think about SUCELLOG concept – is it interesting for your industry? Do you see any challenges?

Example of barriers identified in the project:

- Technical
  - Properties of the raw material not appropriate to be used in existing equipment
  - Risk of contamination when switching production line from bioenergy to regular activities
- Regulatory
  - «waste» origin of the product prohibits using it as fuel for households
  - Different taxing rates (raw material, product, fuel)
- Non-technical
  - Lack of funding
  - Complexity of new value chains (need for logistics, many actors involved, takes long time, purchase and sales contracts)
  - Customers acceptance of the new product (e.g. dark pellets vs light)
  - …

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