

# Hedgerow harvesting in Flanders

our experiences



# Agenda

1. Who are we?
2. The TWECOM project – pilot region
3. The hedges
4. The machinery
5. Harvesting results
6. The drying of the chips
7. The cooperation in Bocholt

# Agrobeheercentrum Eco<sup>2</sup>" (ABC Eco<sup>2</sup>)

- a non-profit organization (2012)
- Aim: support local "agro- environmental cooperations (AEC's)"
- the umbrella organization for 25 AEC's in Flanders

# AEC's in Flanders

- cooperation of farmers
  - Farmers initiative lead by farmers
- collaborating
  - Sharing of work, knowledge, experience, equipment, vision
- on delivering green and blue services
  - Landscape, nature, water management
- within an economic farming perspective
  - Focus on active farmers
  - Win-win for economy and ecology
- in a specified region
  - Local initiatives, site-specific approach



# Agrobeheergroepen

Overview current thema's en areas



Bees



Weidevogels



Waterconservation



Grasland Management



Akker-  
vogels



Erosion



Holloways



Hedges

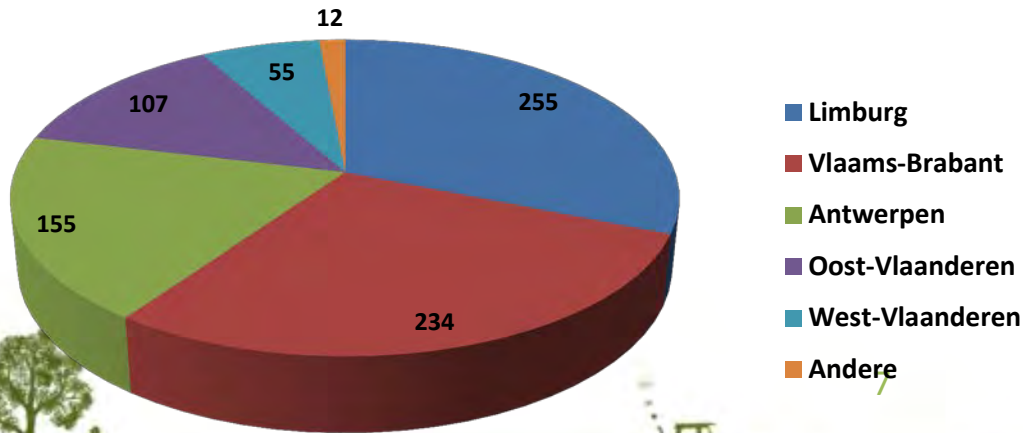


± 800 working members

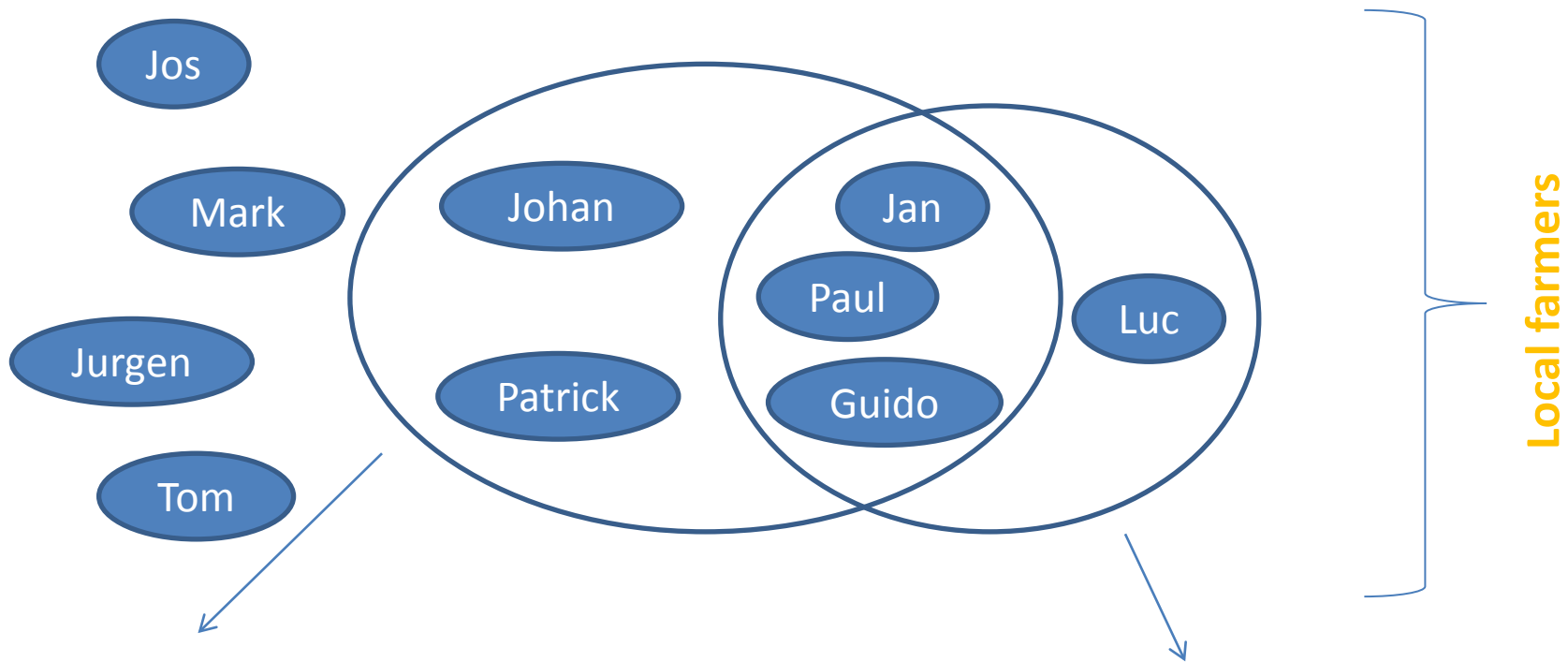


1. Cooperation of farmers
2. To enable farmers to do contractor-work on a legal basis
3. Paperwork, prospection, follow-up

### Aantal vennoten per provincie



Totaal: 818 vennoten (april 2015)



## Agrobeheergroep AEC

- Groepering rond landschapsbeheer
- Aanspreekpunt
- Overleg (intern & extern)
- Opleiding mogelijk
- Gezamenlijke projecten

## Uitvoeren van werken

- Via agro | aanneming cvba
- Houtwerken, maaiwerken, inzaaien, ...
- Vergoeding voor geleverde werk
- Ev. samenwerken



# Partners in Limburg



# Situating pilot region - Limburg



# The hedges

1. Mainly lines of trees, little undergrowth
2. Mainly oak
3. Exotic species (*Prunus serotina*) problematic in north.
4. Often property of the municipality
5. Mainly next to roads
6. Mainly bordering farmland

# Work done winter 2014-2015



Red = hedges

Green = wood chip storage

Orange = summer '14



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execplanmer, featureeditor, materialeditor, ...





Landschapsbouwers aan het werk



Landschapsbouwers aan het werk









Landschapsbouwers aan het werk



Landschapsbouwers aan het werk



Landschapsbouwers aan het werk



Landschapsbouwers aan het werk

# Selection of machinery

1. Goal: coppicing with 10 year cycle
2. Next to roads
3. Large trees: no management for 60 years





# Machinery purchased



## Second hand crane

- Built in 2000
- 5700 hours worked
- price: 29.000 €
- 17 tonnes
- Blade and "paws" for stabilisation
- Triple arm



# Machinery purchased



## Felling Head

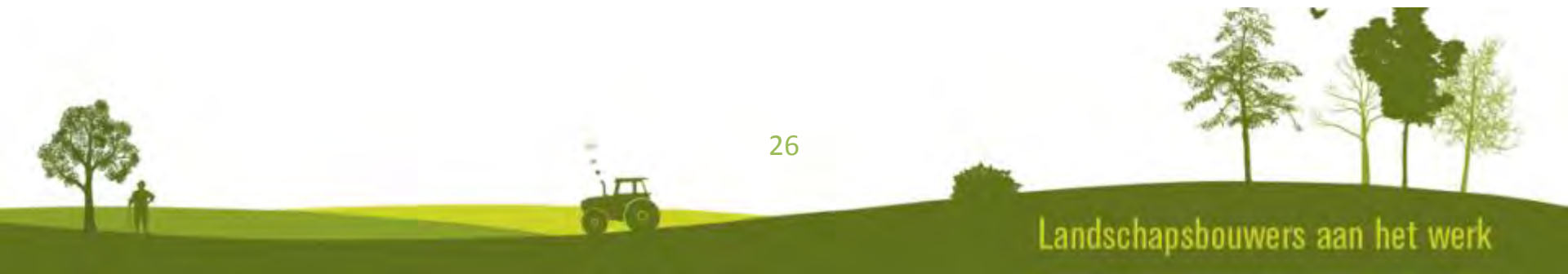
- Westtech Woodcracker C350
- Price: 27.000€
- Trees till diameter of 35cm

# Machinery purchased



## Chipper

- Price: 131.000 euro
- Trees up to diameter of 45cm
- Storage of 13 cubic meters.
- Powered by tractor of 150pk to 200pk.



# Machinery: selection of crane operator

1. Farmers with extra time in winter
2. Via cooperation Agro|aanneming
3. Payed per hour worked
4. 2 drivers for north & 2 drivers for south

# Harvesting results

|                        | 2013-2014                               | 2014-2015                           |
|------------------------|---|-------------------------------------|
| Total length harvested | 1,7 km                                  | 2,1 km                              |
| Number of hedges       | 12                                      | 20                                  |
| Chips                  | 99 tonnes                               | 120 tonnes                          |
| Felling                | Felling head - first job                | Felling head                        |
| Chipping               | Rented ufkes greentec 20 m <sup>3</sup> | Own ufkes greentec 13m <sup>3</sup> |
| Transport              | 2 Rented 30m <sup>3</sup> containers    | Own 40m <sup>3</sup> container      |

# Results Bocholt

Hedges: wood harvested 60 tonnes per km

|               | 2013-2014 |       | 2014-2015 |       |
|---------------|-----------|-------|-----------|-------|
| total bocholt | m/u       | kg/u  | m/u       | Kg/u  |
| felling       | 58        | 3.309 | 98        | 5.625 |
| chipping      | 166       | 9.455 | 71        | 4.073 |



# Work done- winter 2013-2014



Red = felling

Blue = storage

Green = forced drying

# Work done- winter 2013-2014

| Location  | Length                               | quantity           | Felling                           | Chipping                              |
|-----------|--------------------------------------|--------------------|-----------------------------------|---------------------------------------|
| Gingelom  | 10 large oaks<br>+ orchard 20<br>are | 63 tonnes          | Manual                            | Jenz                                  |
| Bocholt   | 1,74 km<br>hedges                    | 99 tonnes          | Crane +<br>felling head           | Ufkes<br>Greentec<br>20m <sup>3</sup> |
| Tongeren  | 500 m<br>hedges                      | Not chipped<br>yet | Crane +<br>felling head           | /                                     |
| Houthalen | Forest<br>clearing                   | 368 tonnes         | Rented crane<br>+ felling<br>head | Heizohack                             |
| TOTAL     |                                      | 530 tonnes         |                                   |                                       |





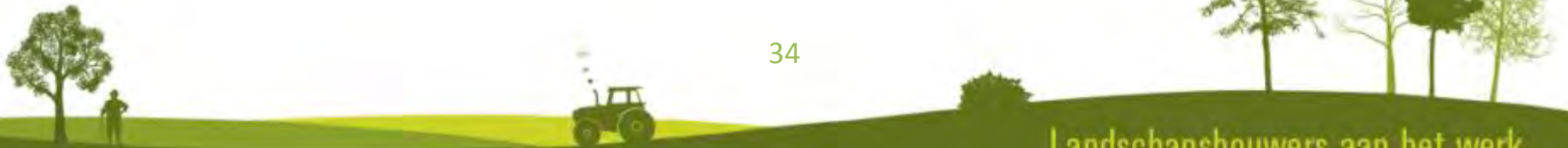
# Wood chip drying

## 1. Natural drying

- Open air
- Toptex
- Roof

## 2. Forced drying

- Hot air
- Cold air





# Chips

## 1. Poplar chips 2012:

Drying under TOPTEX from march till september  
40% humidity

72 tonnes for 27 euro/ton loaded on site

320 m<sup>3</sup>

# chips

## 1. Drying experiment

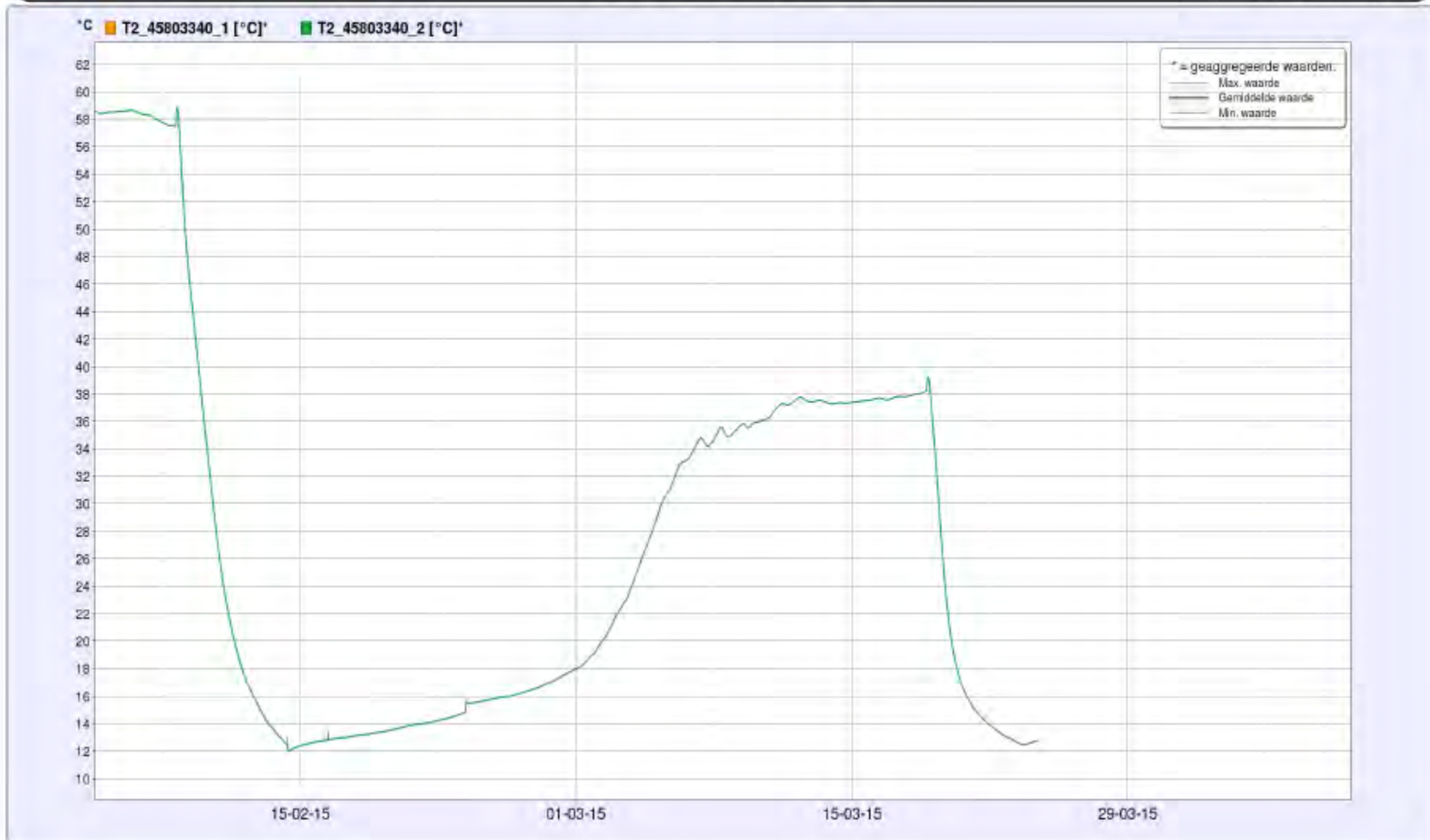
|               |                          |           |
|---------------|--------------------------|-----------|
| Fresh chips   | 83,96 tonnes             | 56% water |
| Dry chips     | 50,6 tonnes              | 0% water  |
| Time chipping | 6997 kg/u                |           |
| Sold          | 63 tonnes                | ?% water  |
|               | 85 euro/ton<br>delivered |           |











Droogproeven opzetten met niet gebruikte warmtestromen.  
Droogcontainer bij pocketvergisters zetten



Landschapsbouwers aan het werk

# Pilot Bocholt

1. Municipality owns 100 km of hedges
2. Hedge-management plan by RLLK
3. 3 new schools are being built

1. Local energy cooperation will install wood-chip-boiler and heat-net
2. Will sell heat (not chips)

# Pilot: Bocholt

## Local Energy cooperation

- Scholen (klanten)
  - Biotechnicum
  - Kleuterschool
  - Lagere school
- Gemeente
- RLLK
- A|A



# Wood chip boiler Bocholt

1. Boiler: Herz 250kW  
anual 220 tonnes wood chips
2. Bunker: 100 m<sup>3</sup>

