Wetenschappelijke Instelling van de Vlaamse Gemeenschap

Instituut voor Bosbouw en Wildbeheer

Impact of recent European and national policies: the promotion of regional basic material in Flanders (Northern Belgium)

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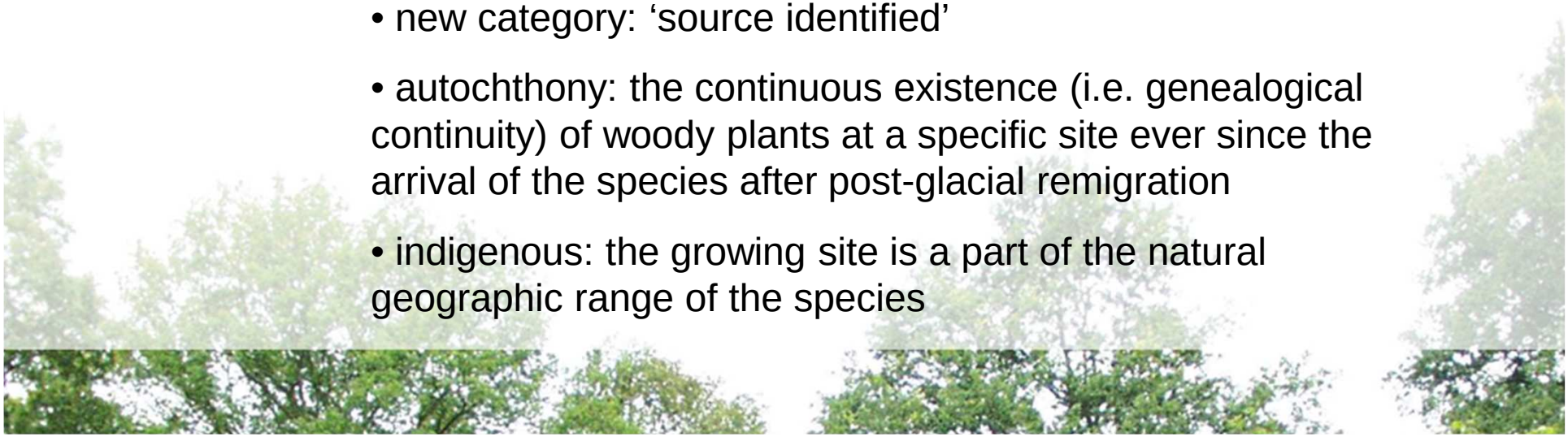
Introduction

EC legislation

- Rio Convention → conservation of genetic diversity in forests
- Council Directive 1999/105/EC: forest reproductive material (FRM) of 47 species in Europe must be reliable, identified and originating from inspected sources

→ certificate with unique code, type of basic material, category of FRM

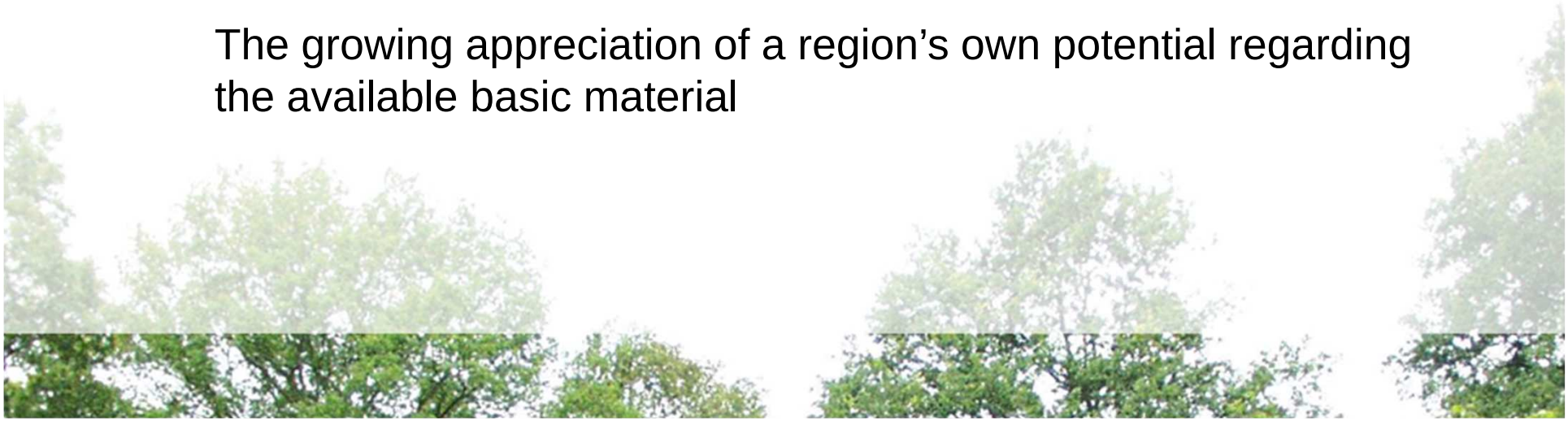
- new category: ‘source identified’
- autochthony: the continuous existence (i.e. genealogical continuity) of woody plants at a specific site ever since the arrival of the species after post-glacial remigration
- indigenous: the growing site is a part of the natural geographic range of the species



Local adaptation

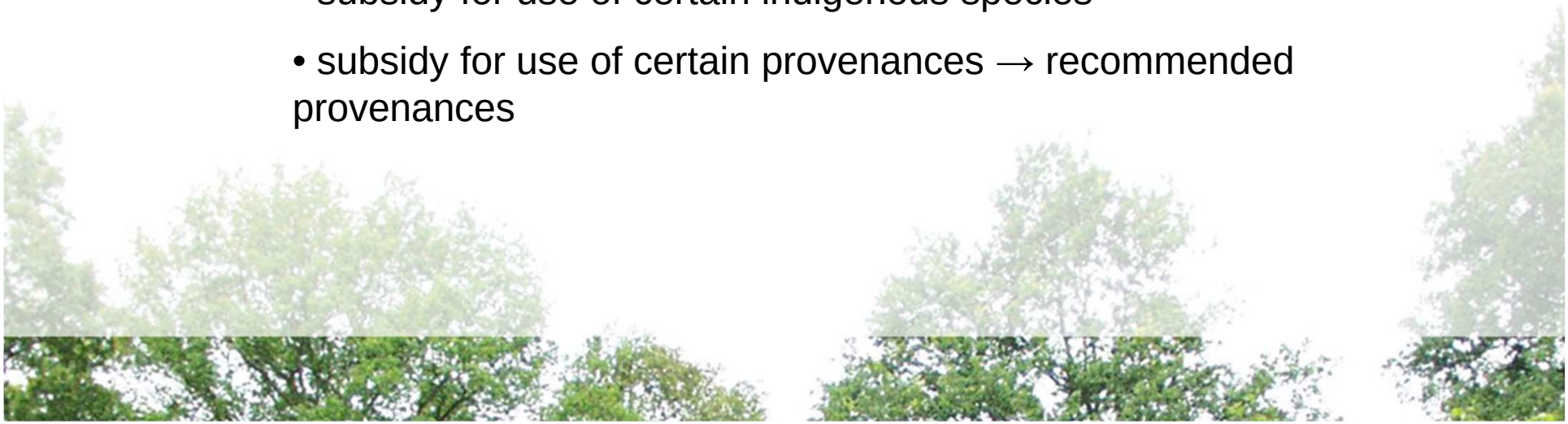
- the process by which populations genetically diverge in response to natural selection specific to their habitat
- maladaptation
- outbreeding depression
- maintaining the amount of genetic variation → survival

The growing appreciation of a region's own potential regarding the available basic material



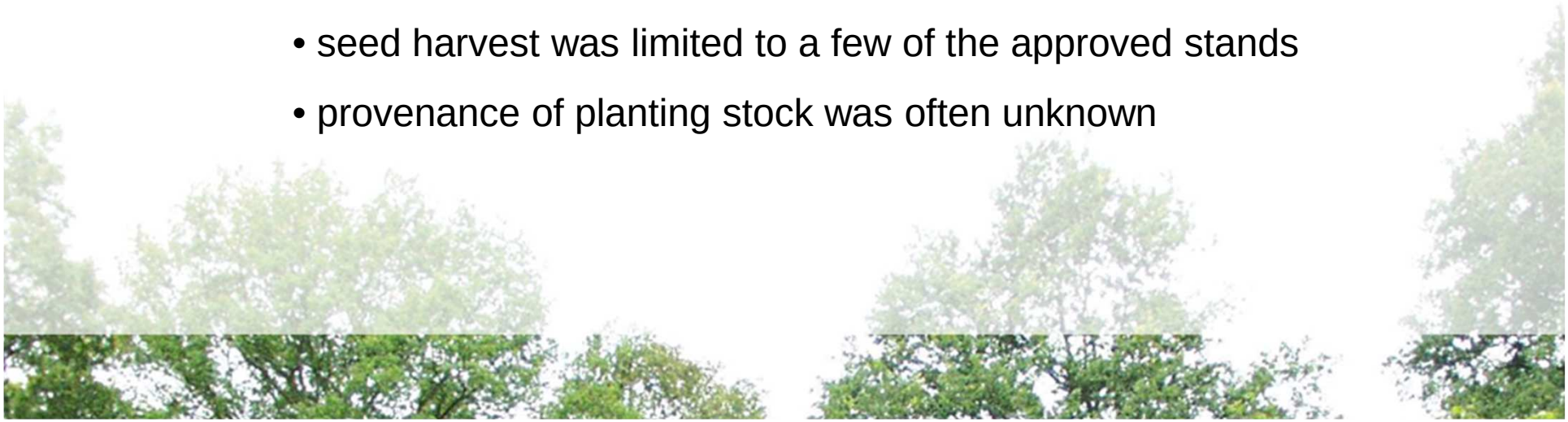
Flanders

- Order of the Flemish Government (2003)
  - 34 indigenous tree and shrub species added to the list: certification is optional
  - category ‘source identified’ can only be used for autochthonous FRM
- subsidy scheme (two Flemish Orders, 2003)
  - subsidy for use of certain indigenous species
  - subsidy for use of certain provenances → recommended provenances

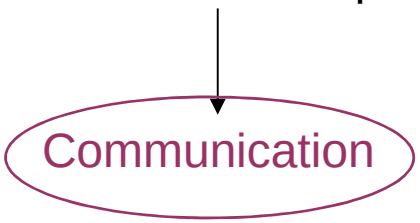



Flanders
Brussels
50 0 50 Km
N

- Specifics:
  - forest cover: extremely low (10.8%) and fragmented → average area of a forest property is < 1 ha
  - 70 % of the total forest cover is privately owned
  - many exotic species for timber production
  - habitat conversion
  - until 1997: approved basic material existed for only 4 indigenous species of economic importance
  - seed harvest was limited to a few of the approved stands
  - provenance of planting stock was often unknown

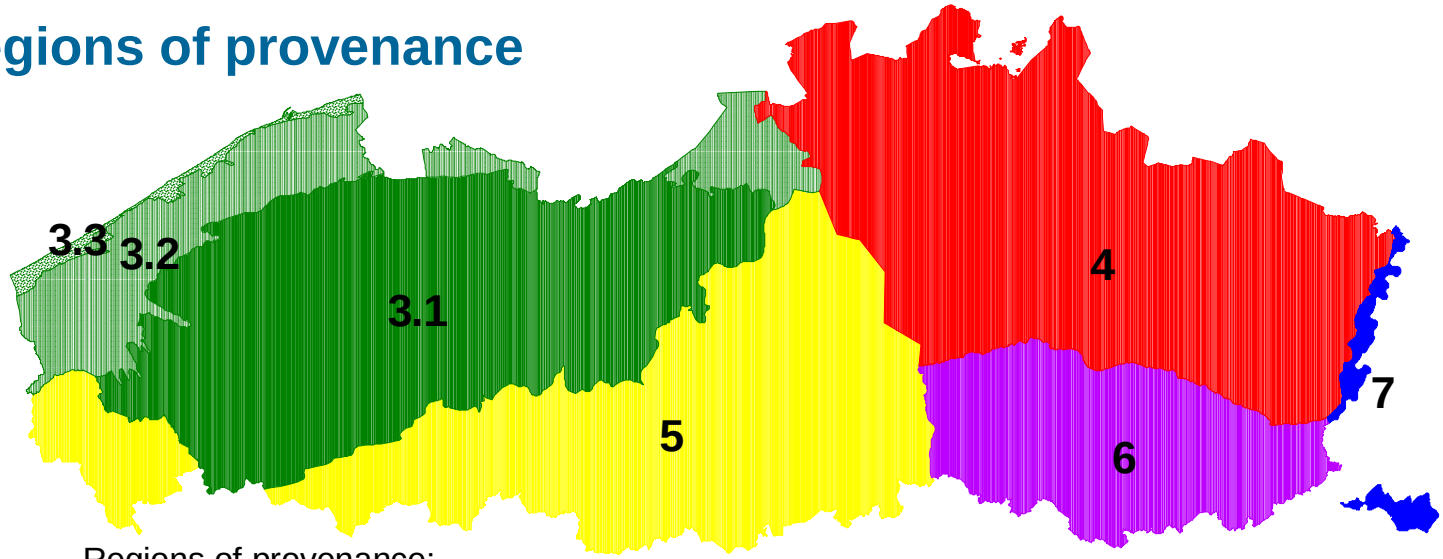


- Necessary to:
  - select and approve suitable basic material
  - create seed orchards
  - stimulate seed harvest
  - inform, sensitise and advise all parties involved



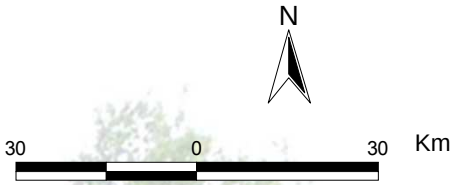
Materials & methods

Regions of provenance



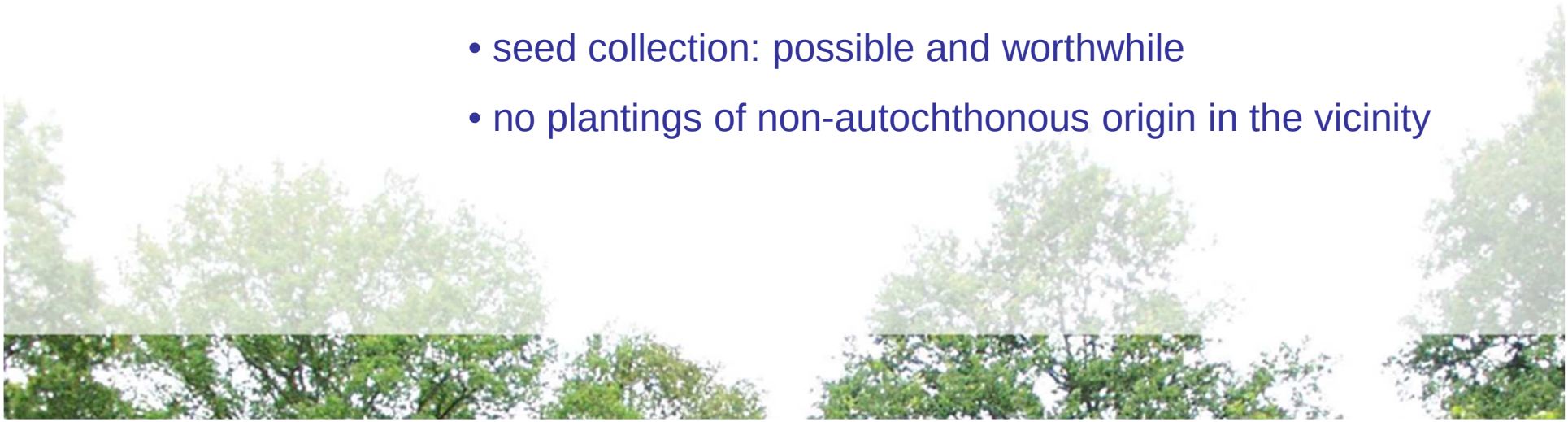
Regions of provenance:

- 3.1: Sandy Flanders
- 3.2: Polders
- 3.3: Coast and Dunes
- 4: Campine
- 5: Brabantine District West
- 6: Brabantine District East
- 7: Low Meuse Plateau



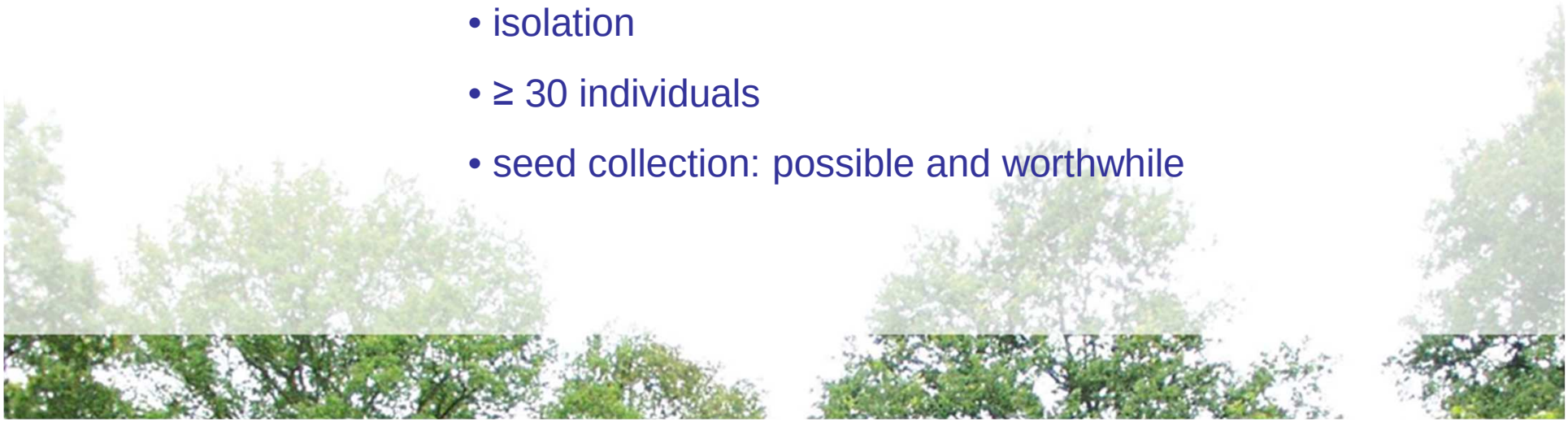
Basic material

- approved seed sources and stands
  - source identified
    - inventory of autochthonous woody plants in Flanders (from 1997 →) : good score for autochthony and high score for local abundance
    - evaluation in the field
      - ≥ 30 individuals
      - seed collection: possible and worthwhile
      - no plantings of non-autochthonous origin in the vicinity



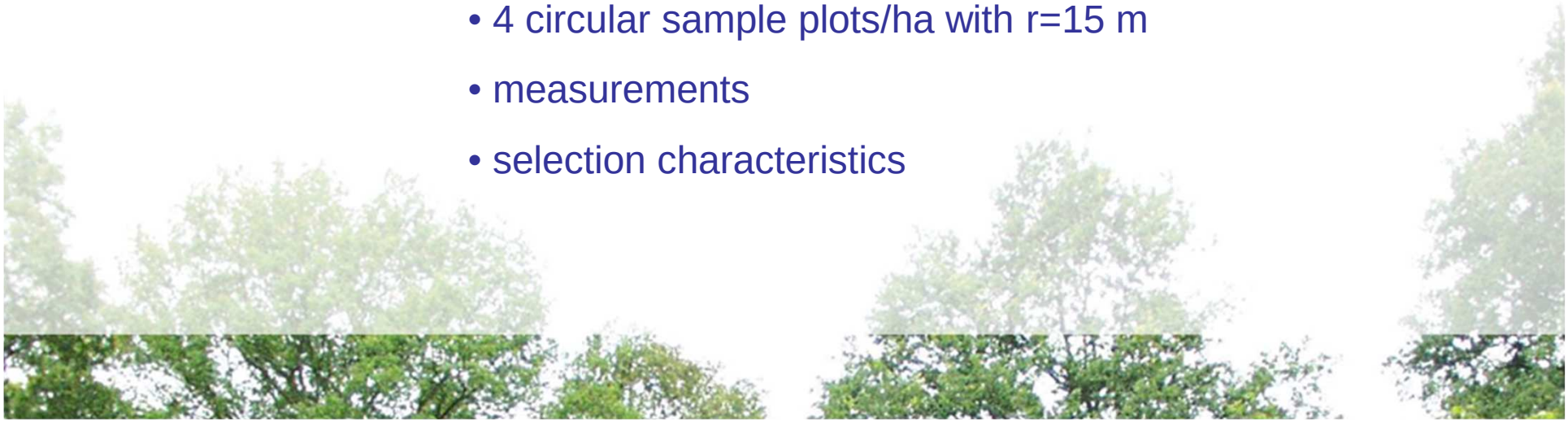
Basic material

- approved seed sources and stands
  - source identified
  - selected
    - information from local forest managers
    - evaluation in the field
      - global assessment of phenotype and vitality
      - isolation
      - ≥ 30 individuals
      - seed collection: possible and worthwhile



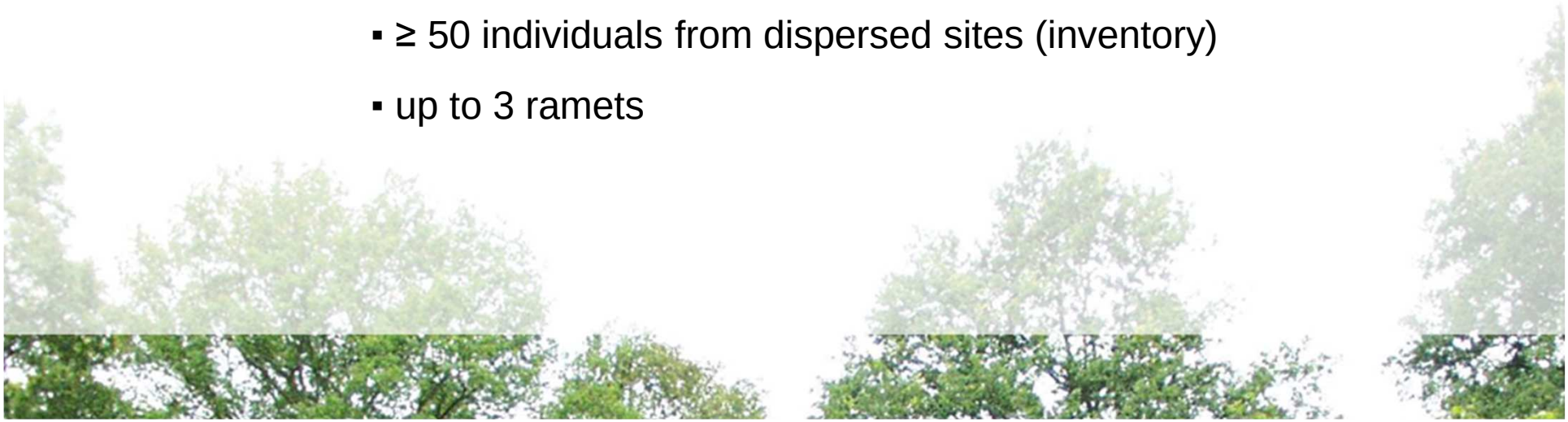
Basic material

- approved seed sources and stands
  - source identified
  - selected
    - information from local forest managers
    - evaluation in the field
    - detailed evaluation (Van Langenhove *et al*., 2000)
      - 4 circular sample plots/ha with r=15 m
      - measurements
      - selection characteristics



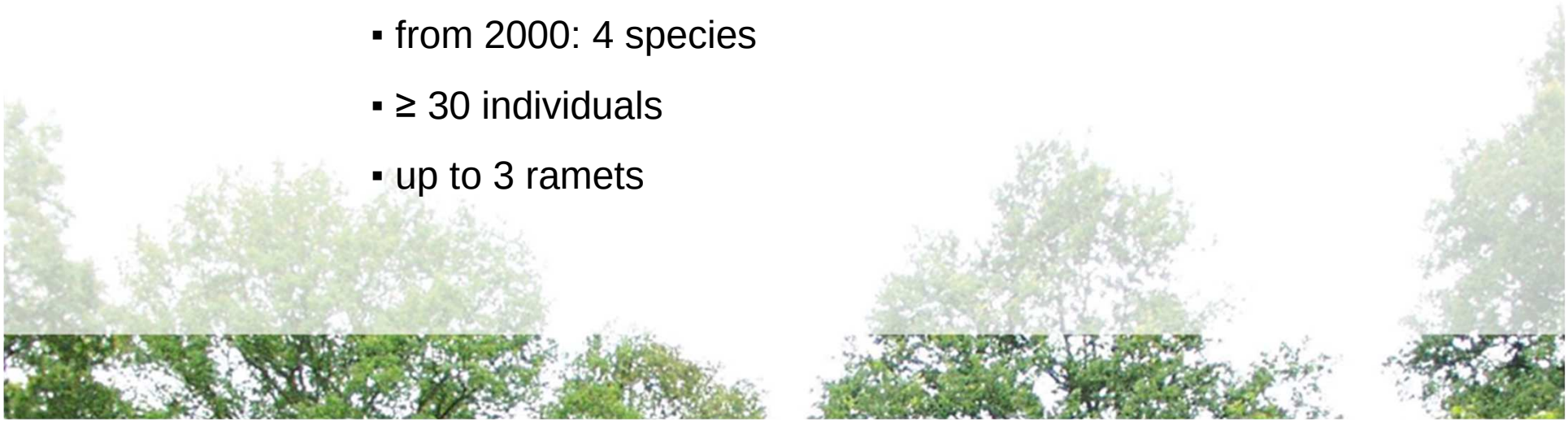
Basic material

- approved seed sources and stands
- seed orchards → vegetative propagation
  - source identified: autochthonous seed orchards
    - since 1999
    - 21 species
    - several orchards for every region of provenance
    - ≥ 50 individuals from dispersed sites (inventory)
    - up to 3 ramets



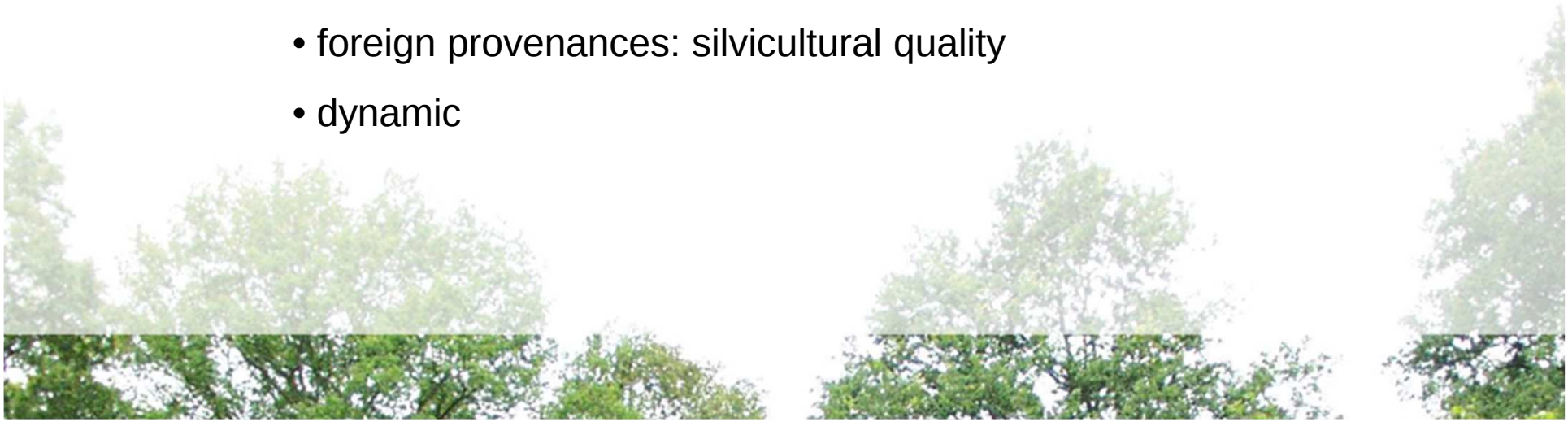
Basic material

- approved seed sources and stands
- seed orchards
  - source identified: autochthonous seed orchards
  - qualified: plus trees
    - evaluation of the plus trees
    - 1997-2000: 5 species by Van Langenhove *et al.* (2000)
    - from 2000: 4 species
    - ≥ 30 individuals
    - up to 3 ramets



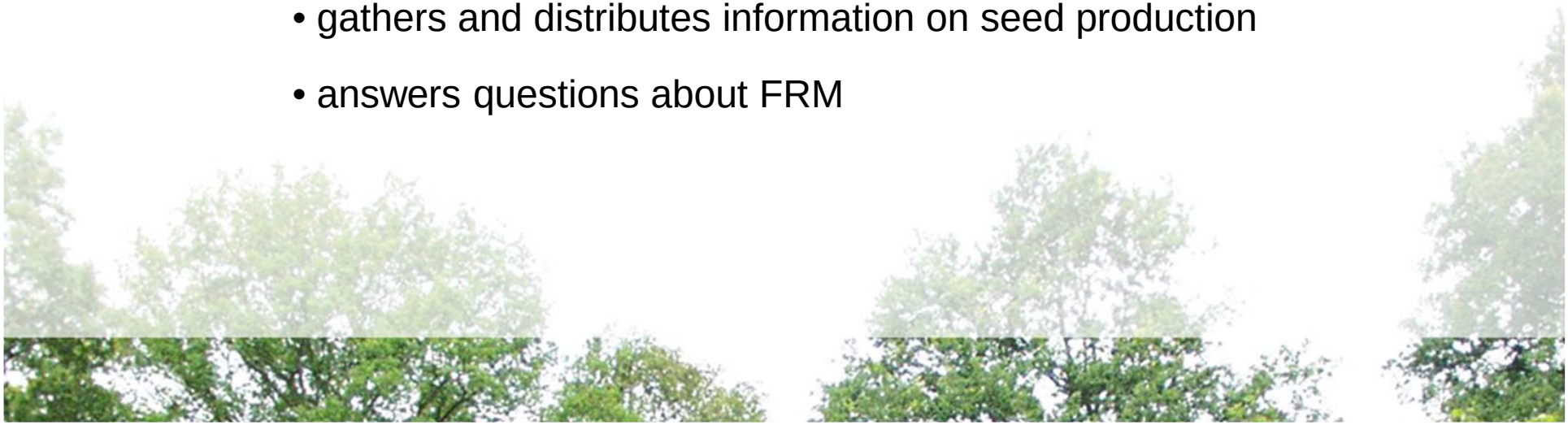
Basic material

- approved seed sources and stands
- seed orchards
- recommended provenances
  - indigenous species
  - similar climatological conditions
  - elevation (e.g. < 300 m in the Walloon region)
  - foreign provenances: silvicultural quality
  - dynamic



Communication

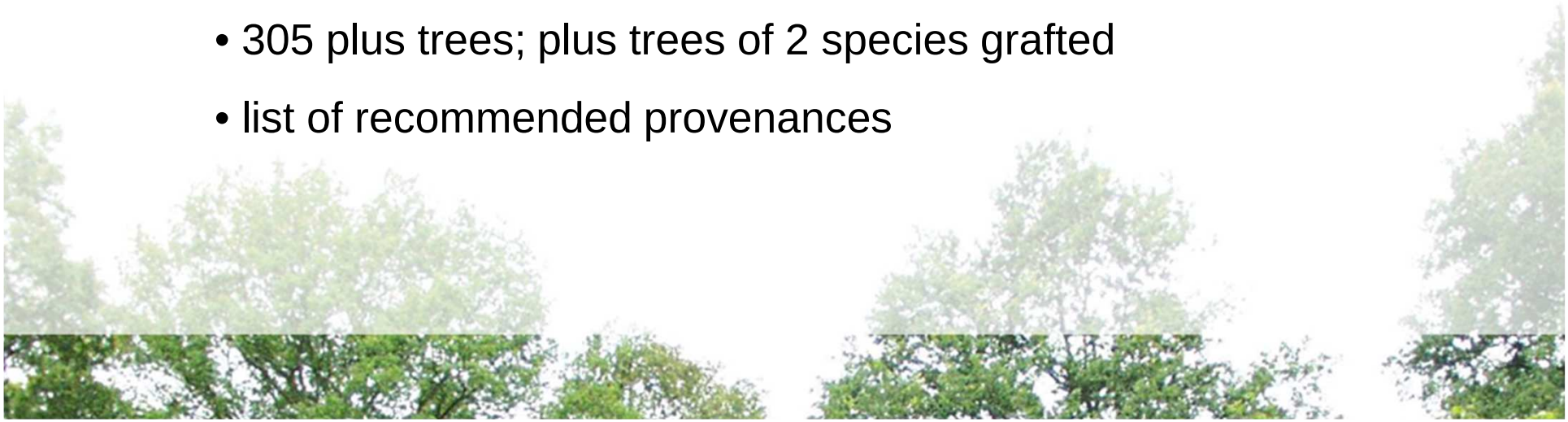
- circulation of list of recommended provenances → informative brochure
- informative sessions on autochthonous woody plants
- planting advise → on the choice of suitable species and provenances
- Contact Point FRM
  - gathers and distributes information on seed production
  - answers questions about FRM



Results

Basic material

- source identified: 20 approved seed sources and stands → often hedges, thickets, … of private landowners!
- selected: 12 approved seed stands
- 27 autochthonous seed orchards of 11 species (6 sites) for 1 region of provenance
- 305 plus trees; plus trees of 2 species grafted
- list of recommended provenances



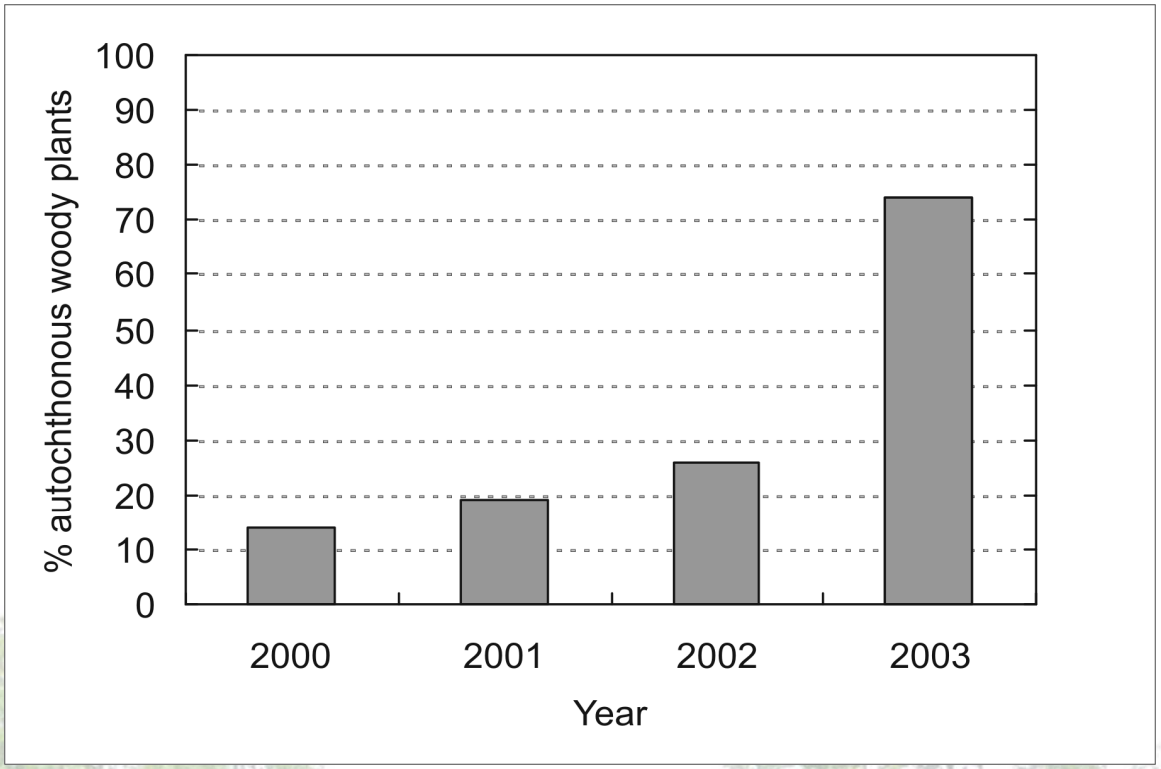

Legend:
stand or seed source, category "source identified"
stand, category "selected"
seed orchard of autochthonous woody plants
seed orchard, category "qualified"
Plus tree
N
20 0 20 Km

Communication

public forest managers, 2 nurseries of FGAD, 2 regional non-profit organisations, 4 private nurseries

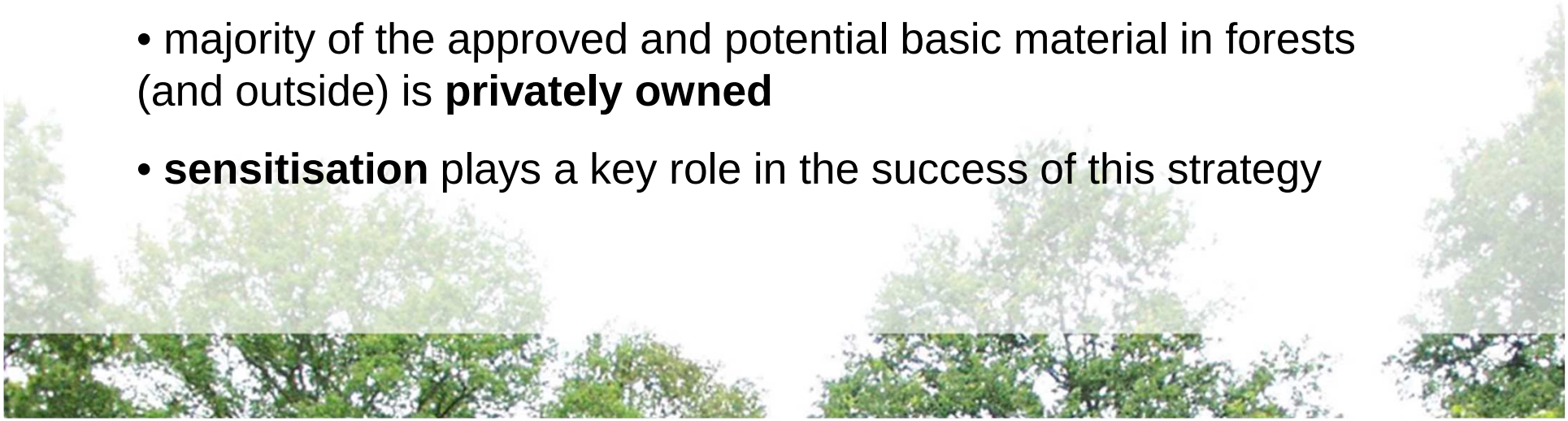
- seed collection
- cultivation (sales contract)
- use of autochthonous planting stock in public forests of the Flemish Region, or for projects with an ecological purpose
- local provenances have become extremely wanted

The evolution of the percentage autochthonous planting stock cultivated in the nurseries of the FGAD over the period 2000-2003 (Dumortier *et al.* 2005).



Discussion

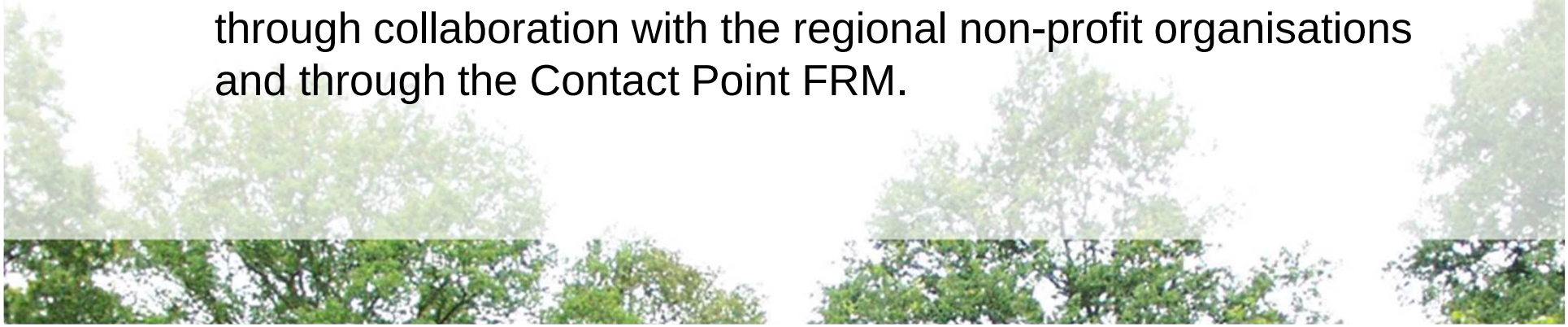
- using local provenances should be the rule to follow in most situations
- approved basic material: first step towards *in situ* conservation
- seed orchards hold many advantages
- more planting stock of local provenance is available; most of it is not certified
- majority of the approved and potential basic material in forests (and outside) is **privately owned**
- **sensitisation** plays a key role in the success of this strategy



Further (research) needs

- fingerprinting approved basic material: proof of identity
- population genetic research: improving delineation of regions of provenance
- research on genetic diversity of the seed orchards
- ongoing sensitisation: more specified

  Certain private landowners can be contacted as a group, e.g. private forest owners participating in a forest group. Others need a more personalised approach, which can be realised through collaboration with the regional non-profit organisations and through the Contact Point FRM.



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Thank you for your attention

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