

Long-term temperate silvoarable agroforestry research site in Flanders, Belgium

A unique opportunity to study woody root processes in real farming conditions

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AGROFORESTRY

Agroforestry strengthens **ecosystem services**:



- Soil health
- Water management
- Biodiversity
- Climate change mitigation



Increasing productivity and resilience

Knowledge and management gaps limit the implementation of agroforestry in Flanders:



- Species compatibility
- Tree-crop interaction
- Tree (and root) management



Long-term research sites to fill knowledge gaps and demonstrate good practice



RESEARCH SITE

- Location: Inagro, West-Flanders, Belgium
- 1,4 ha silvoarable **alley cropping** system
- Crop rotation with arable crops and vegetables
- Conventional farming using agro-ecological practices to stimulate soil health
- Trees planted in February 2023

Design of the agroforestry field:

- N-S oriented rows of **walnut trees** (*Juglans regia* 'Broadview') for nut production
- Grasses mixed with herbs in tree rows as habitat for beneficial insects
- **Hedgerows** for windbreak and biodiversity



Strong **practice-oriented** approach

ON-GOING LONG-TERM MONITORING

Intensive monitoring using **manual field measurements** and **in situ sensing** techniques

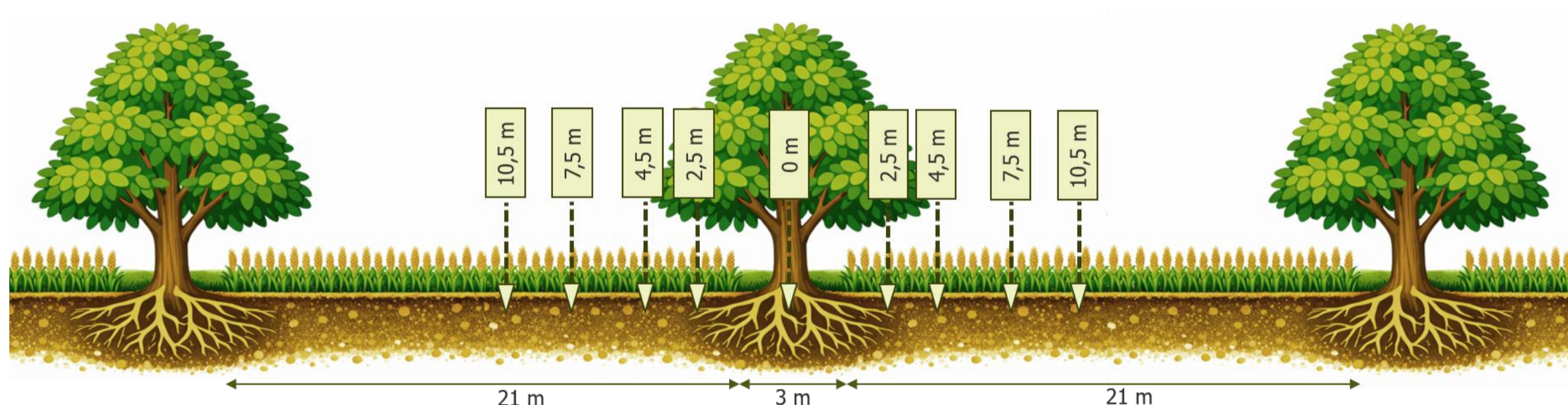
Aboveground

- Crop/tree growth, health & yield
- Microclimate (rain, wind, humidity, temperature)
- Light conditions
- Biodiversity (insects, birds, bats)

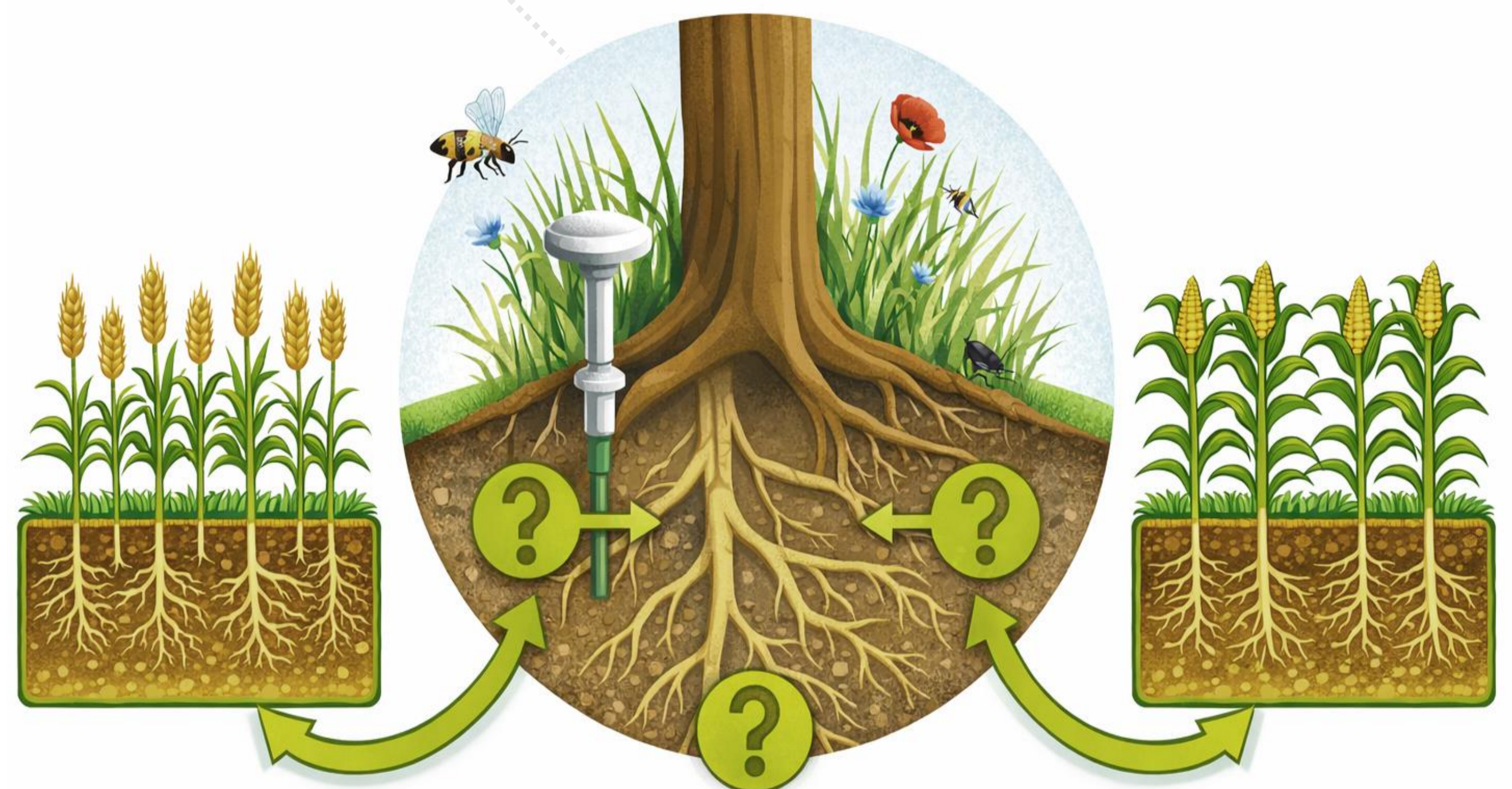
Soil

- Topsoil analysis (pH, OC, nutrients)
- Soil moisture & water management
- Structure & compaction
- Biodiversity (PLFA, nematods, earth worms)

Transect sampling to study spatial gradients of agronomic and ecological variables



MISSING LINK: WOODY ROOT PROCESSES



? nutrients, water, carbon, micro-organisms, ... ?



Linking aboveground performance to belowground woody root processes

SEARCHING FOR RESEARCH OPPORTUNITIES?

This agroforestry research site offers a unique long-term set-up to:

- **Study** root architecture and distribution, root-crop interactions, rhizosphere processes, ... and link them with crop productivity and resilience to environmental stress,
- **Test** new monitoring or in situ sensing techniques,
- **Validate** models with data from real farming conditions,
- **Demonstrate** the value of woody roots to farmers and other stakeholders.



CALL TO ACTION

We are looking for expert partners to go deeper underground!



Join us and use our research site, long-term data, practical experience and extensive farmer network.

WATCH OUR VIDEO!

And get inspired...



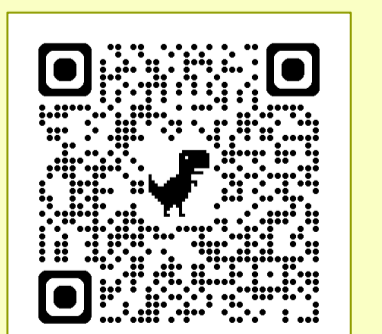
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