

SOMEWHERE IN BELGIUM...

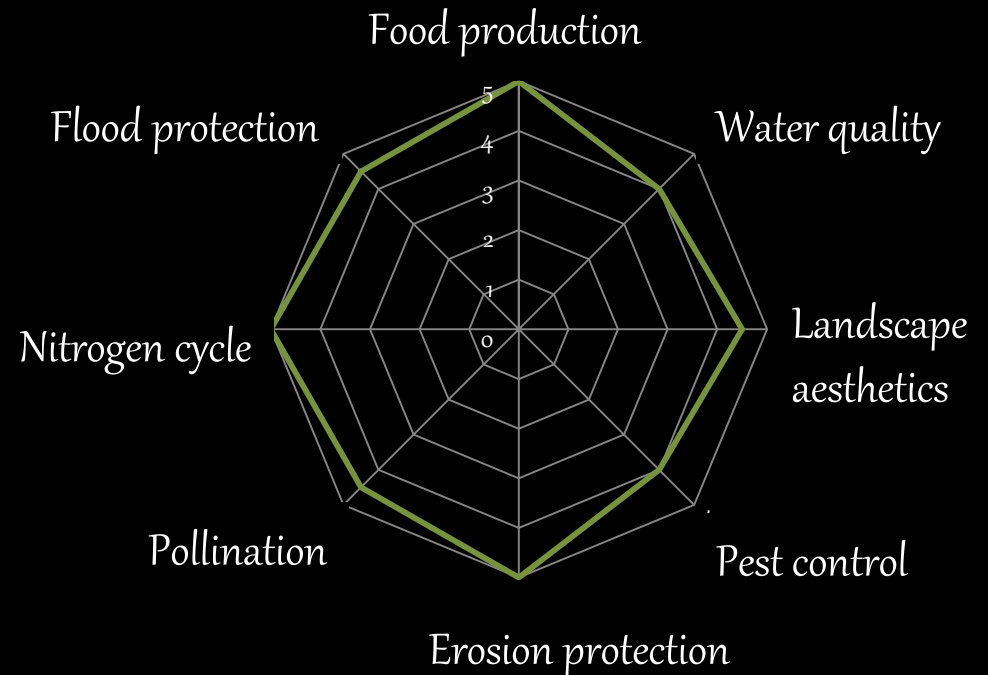


A DYNAMIC FARMERS' NETWORK



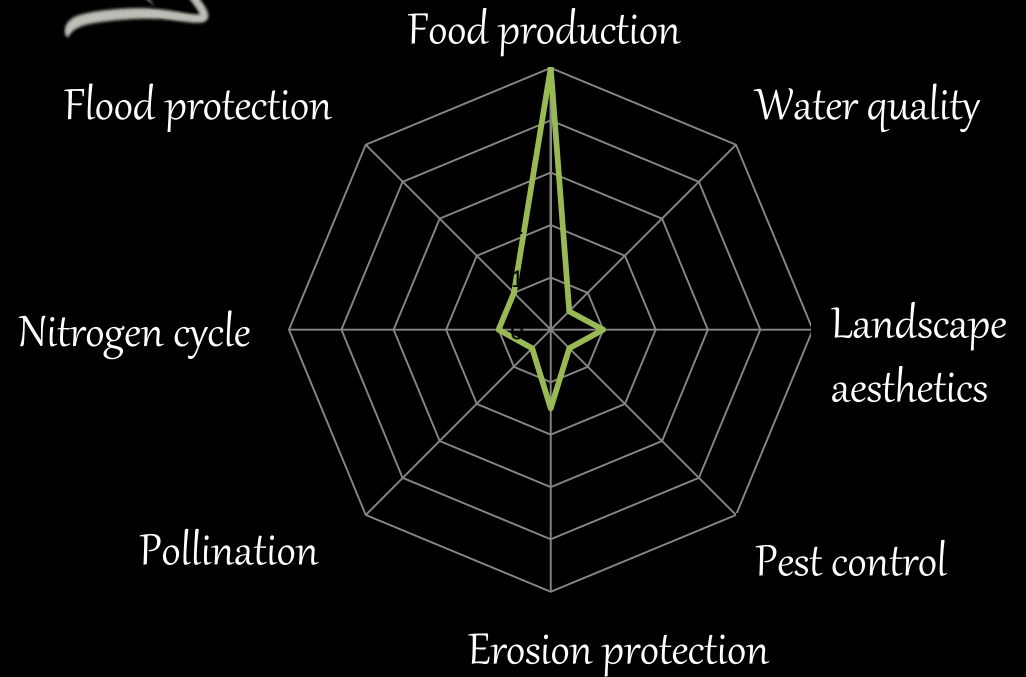
A CONTRIBUTION TO ES DELIVERY?

Agroecological systems



A CONTRIBUTION TO ES DELIVERY?

Conventional systems



CONTRIBUTION OF AGROECOLOGICAL SYSTEMS TO THE DELIVERY OF ECOSYSTEM SERVICES



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STUDY DESIGN



Landscape 1

Landscape 2

Landscape 3

INTEGRATED ECOSYSTEM SERVICE ASSESSMENT

Ecosystems & Biodiversity

Humans

*Structure
&
Processes*



Functions



Services



Benefits



Values



Biophysical ES assessment



Social ES valuation

FOOD PRODUCTION

- Cereal production
 - Quantity (t/ha)
 - Quality (tbc)



PEST CONTROL

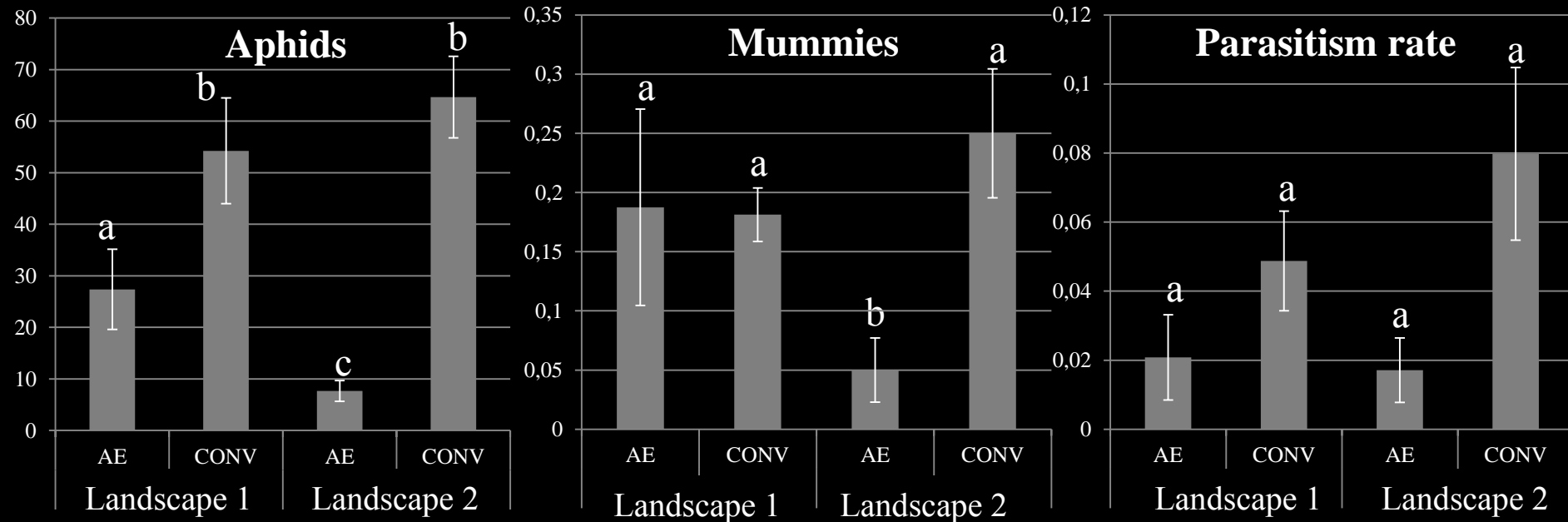
- Predation rate = $(\text{\#mummies} / (\text{\#mummies} + \text{\#aphids}))$



Photos: S. Hatt ©

(e.g. Roschewitz et al. 2005, Balzan and Moonon 2013)

PEST CONTROL



Statistics: R - glm and Tukey test

SOIL FERTILITY

- Organic matter degradation rate

— Bait lamina stick



→ Macro-organisms activity

(e.g. Van Gestel 2003)

- Tea bag index

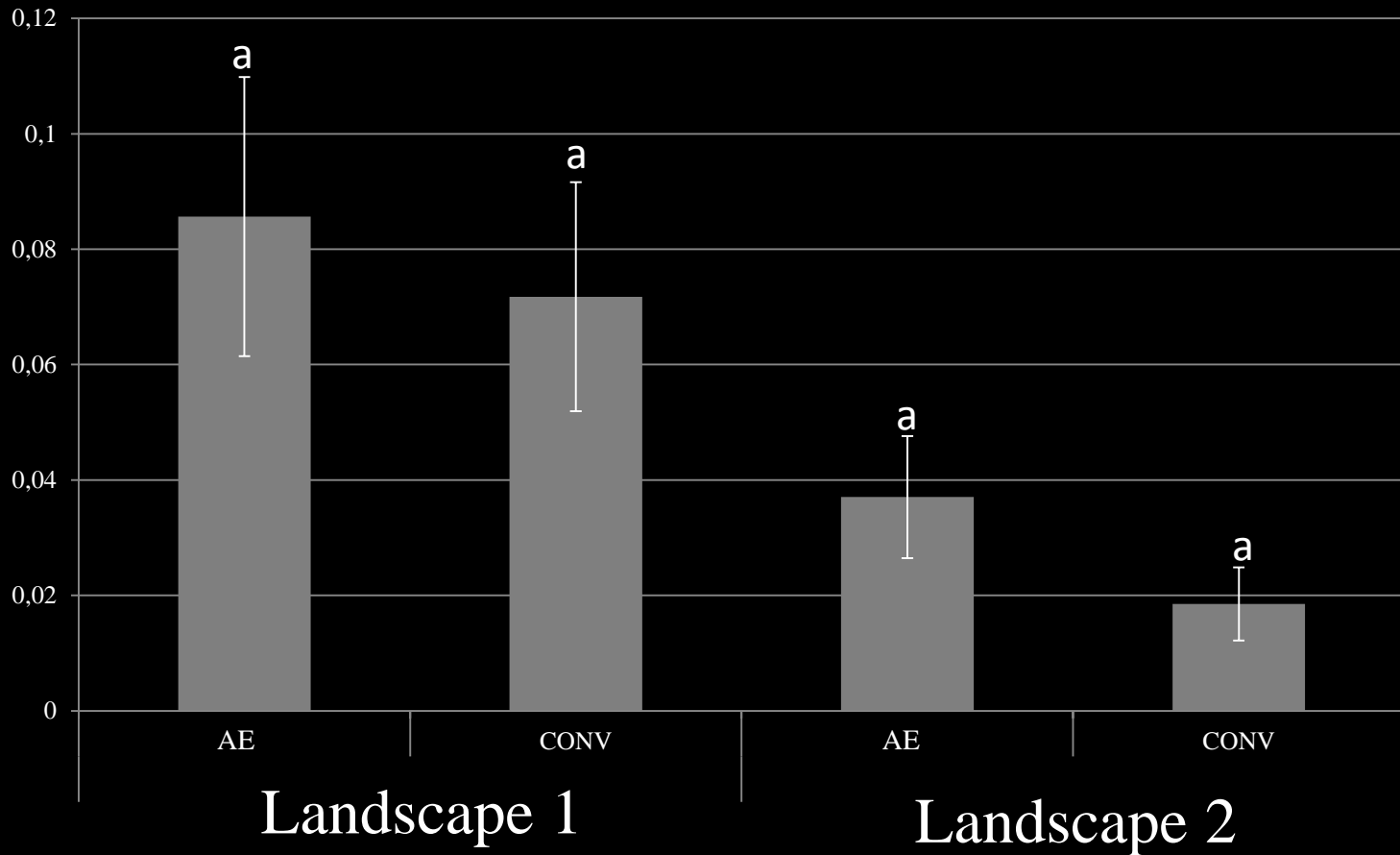


→ Micro-organisms activity

(Keuskamp et al. 2013)

SOIL FERTILITY

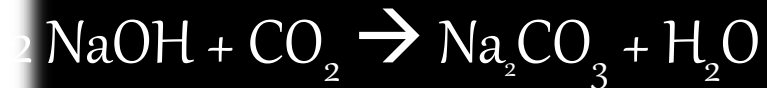
Bait lamina test



Statistics: R – glm & Tukey test

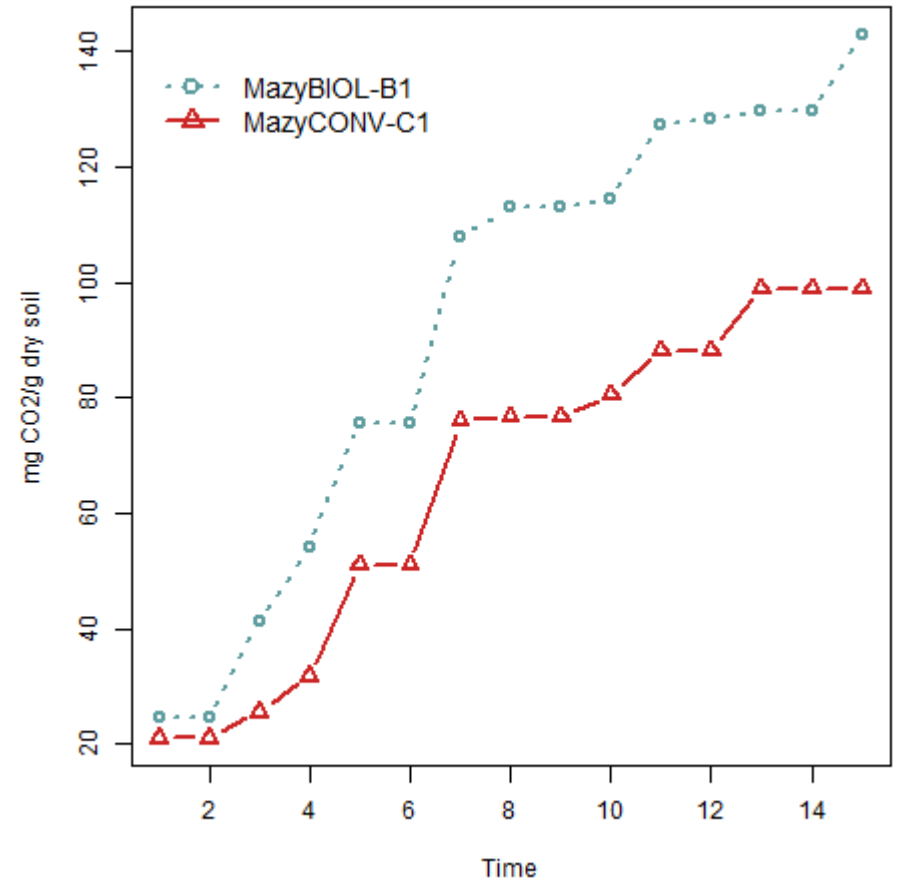
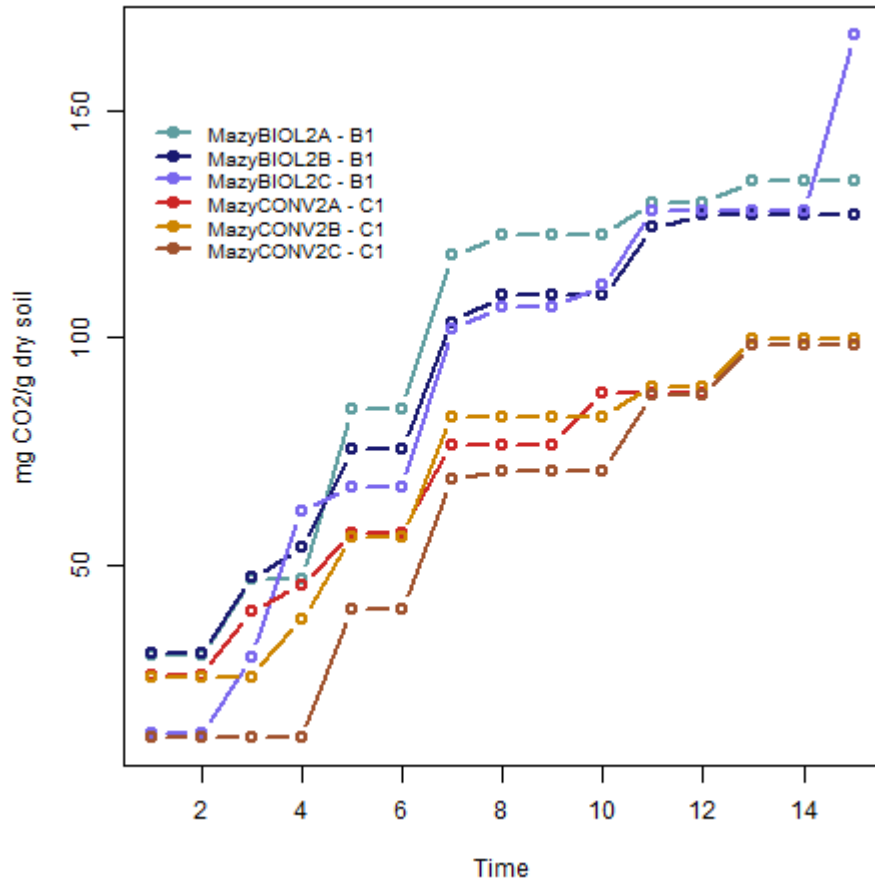
SOIL FERTILITY

- Soil respiration
 - NaOH electrical conductivity



(e.g. Fontaine et al. 2007)

SOIL FERTILITY – SOIL RESPIRATION



Pval= $4.31e-12$ ***

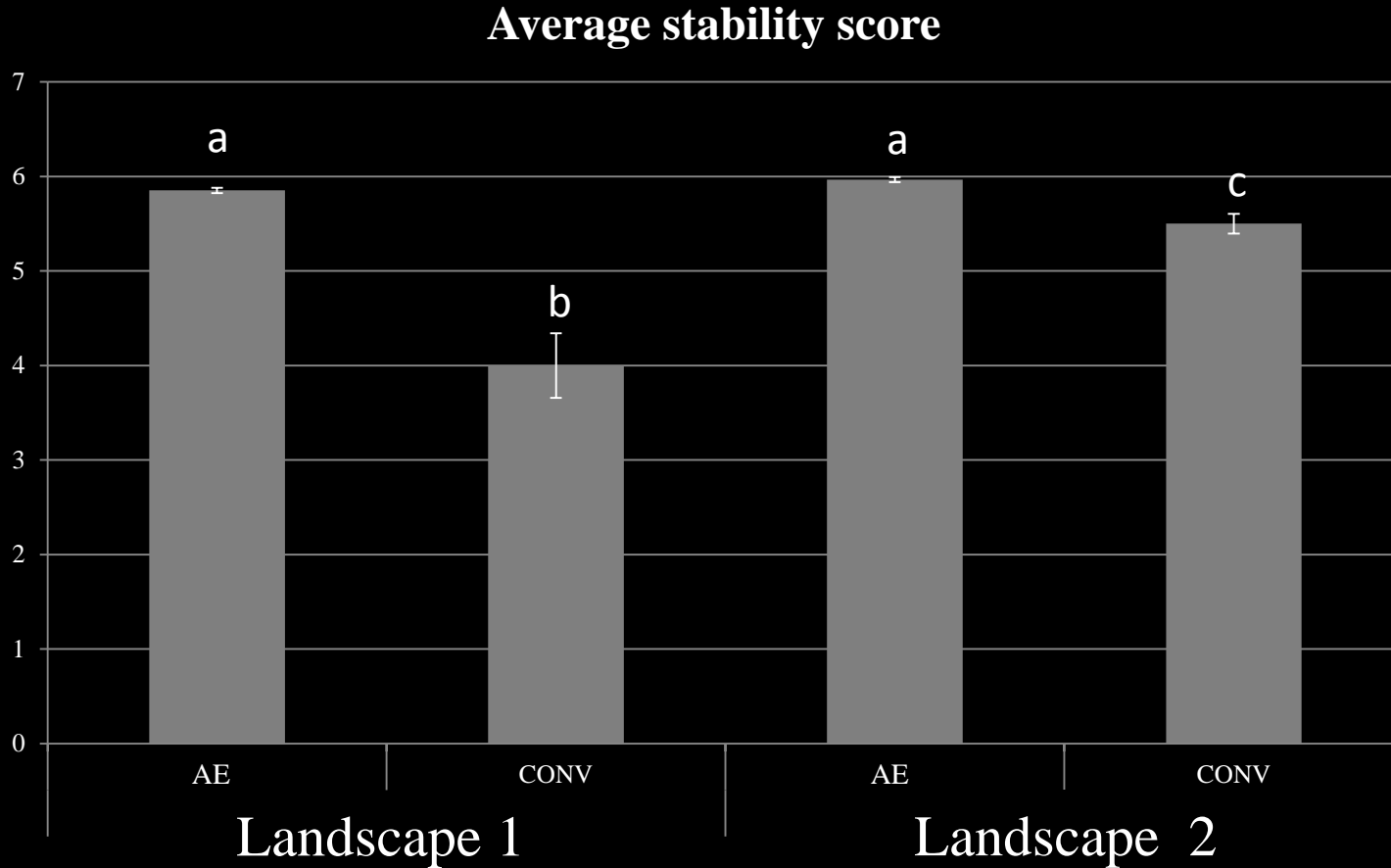
EROSION PROTECTION

- *Structural stability of soil aggregates*



(Herrick et al. 2001)

EROSION PROTECTION



Statistics: R – Kruskal Wallis test + post hoc Nemenyi test

OTHER ES INCLUDED

- ✓ Flood protection → permeametre
- ✓ Soil formation → worm's density, biomass, diversity
- ✓ Water quality → nitrate potentially leaching
- ✓ Soil fertility
 - Cation exchange capacity
 - Base saturation rate
 - Total organic C content (labile and stable pool)
- ✓ Aesthetic landscape → Presence, size and connectivity between appreciated landscape elements (UAV)

THANK YOU

