Natural foundations of biodiversity in primary production; new frontiers in research in Leiden

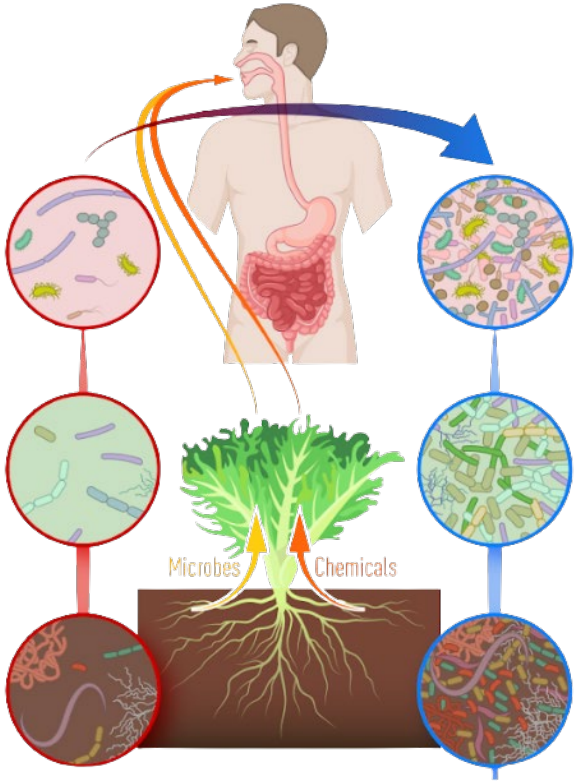
Peter van Bodegom

Leiden University

The natural foundation of biodiversity for primary production systems



Emilia Hannula



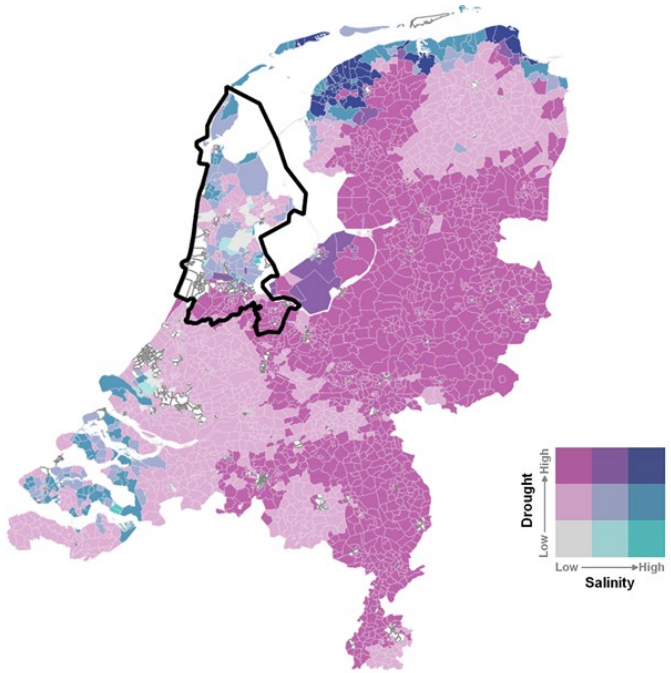
Soils2Guts: A good soil leads to healthy crops and gut microbiomes



Neighbouring plants change the composition of soil microbes, helping farmers to choose better crop combinations, improve yields, and reduce fertiliser use

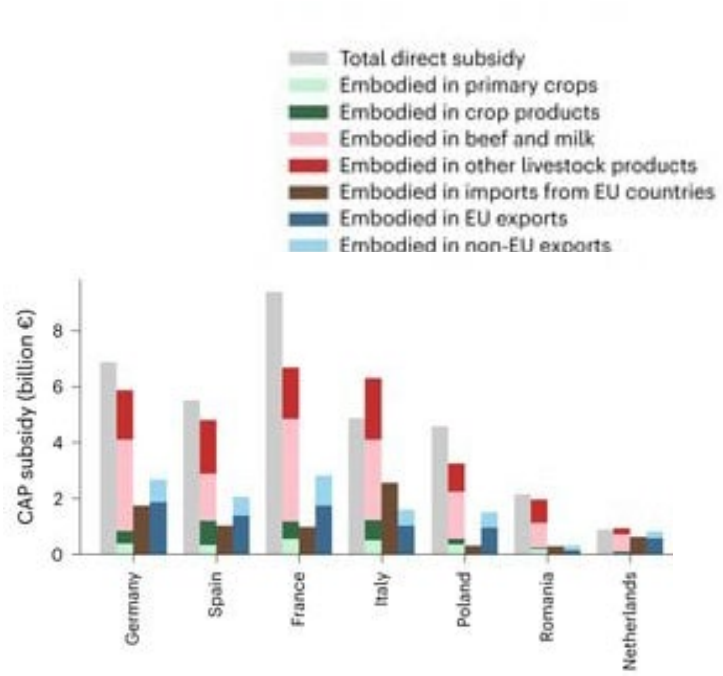
Kuerban et al. 2026 Nature Plants

New tools for biodiversity and agriculture monitoring



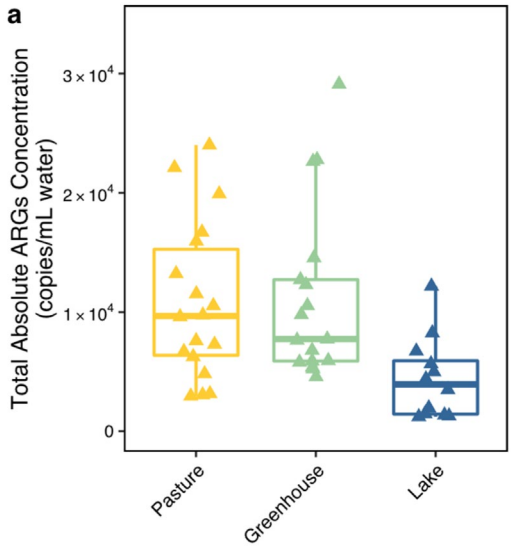
With computer scientists of LIACS, new satellite retrieval methods are developed.

Wen et al. 2022 HESS



Data science techniques are used to investigate global patterns

Kortleve et al 2024 Nature Food



eDNA technology (e.g. on **antibiotic resistance genes** (ARGs) shows potential impacts of agriculture on biodiversity and human health.

Zhao et al. 2023 Biomolecules

Validated Key Performance Indicators to value nature in primary production systems

FAPESP Week NETHERLANDS
OCT 27-29, 2026



Martijn Bezemer

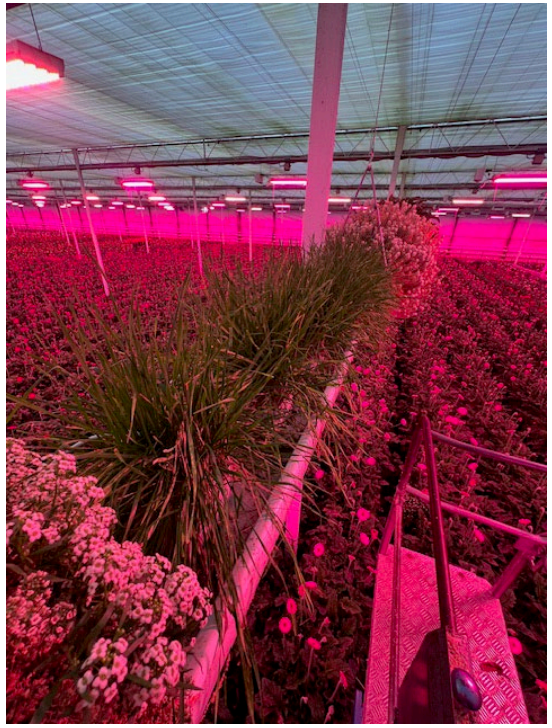


BBBGreen tests the contribution of biodiversity strips next to greenhouse on resilient horticultural systems



TRIPS: Thrips Reduction In Production Systems: Increasing above- and belowground biodiversity in arable leek cultivation to stimulate pest control by natural enemies.

Promoting nature-based solutions



We work on banker systems in horticulture to promote natural enemies



Polderlab: 30 hectares of experimental farming including rice fields to simultaneously promote water management, biodiversity and agriculture

Coupling nature-based solutions to climate resilience

FAPESPWeek NETHERLANDS
OCT 27-29, 2026

Sofia Gomes





The biological foundations of climate resilience of orchard trees are investigated

RESILIENCE
ERC SYNERGY

Arjen Doelman



The mathematical foundations of ecosystem resilience are determined

Influencing governance of biodiversity



With the sector, new Key Performance Indicators of biodiversity-inclusive agriculture are developed



Trans- and interdisciplinary approaches are central to the Leiden Biodiversity Network of scientists: https://biodiversityleiden.org/

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Thank you!

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