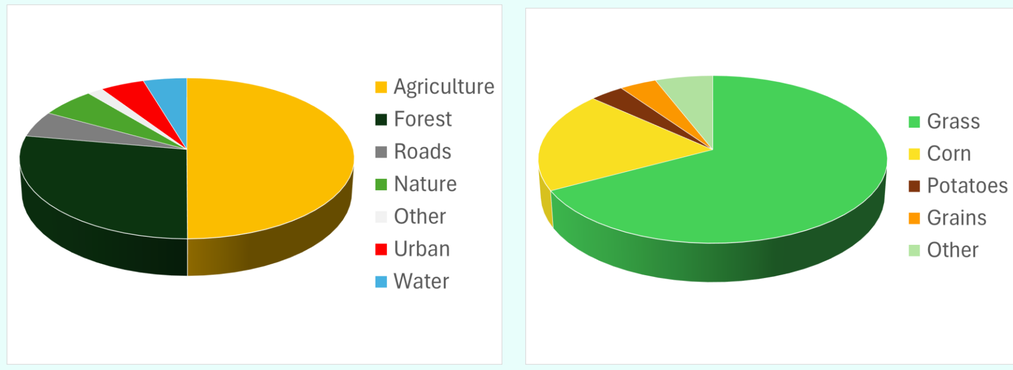
Between facts, ideals and practice

Cooperating for agricultural transition in protected areas for drinking water

Inez de Leau, Martin de Jonge
Vitens, The Netherlands

To protect drinking water sources, Vitens develops a new approach to work with farmers towards a more sustainable use of the soil. Nutrient losses are still too high. Intensive agriculture causes hardness and pesticide problems in groundwater. A changing climate poses new risks.
In a complex playing field the desired transition can only start by farmers and chain parties themselves.
Ecosystem services can contribute to sustainable revenues and improvement of soil and water quality.

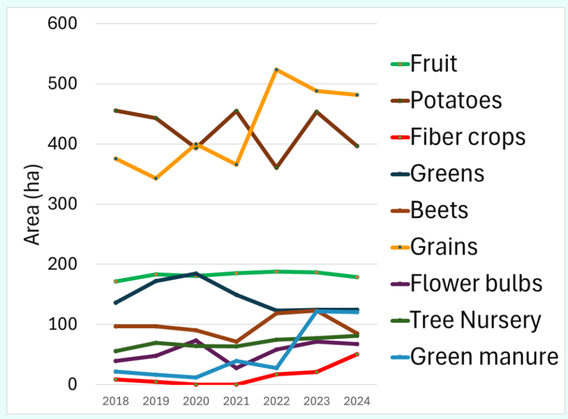
Landuse in groundwater protection areas



Total use (LGN2023, left) and agricultural use (BRP2023, right).
Total area 34000 ha.

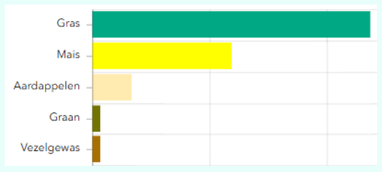
Trends 2018 - 2024

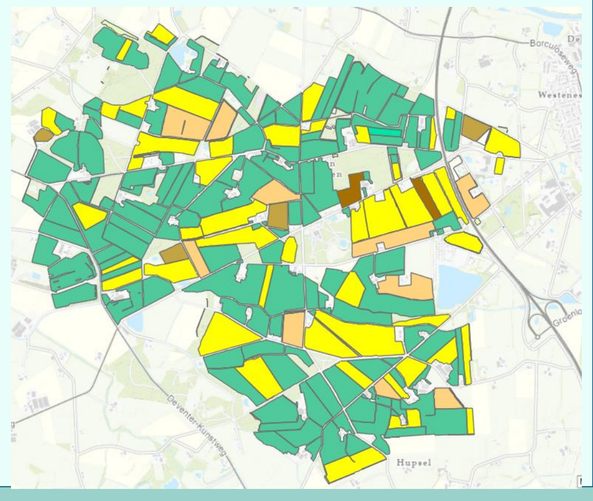
- Slight decrease grass
- Corn stable
- Increase grains
- Increase green manure
- Increase tree nursery
- Upcoming fiber crops



Case Haarlo-Eibergen

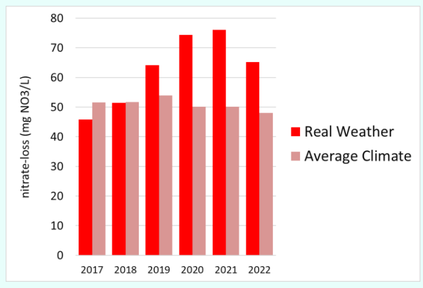
Typical area with
- dominant dairy farming
- rotations of potatoes / grains
- experiments with fiber crops

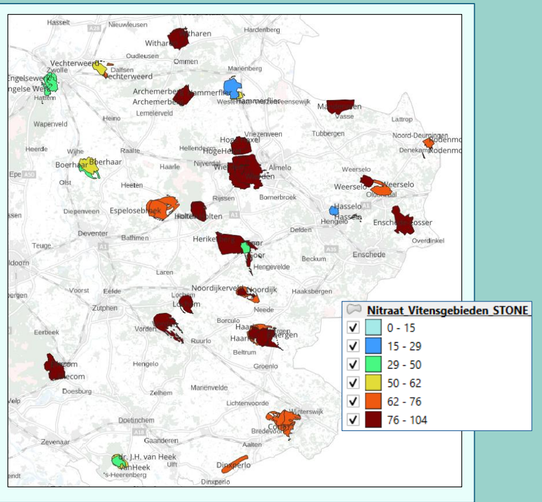




Modelled nitrate losses

- National Initiator-STONE-model used
- 2018, 2019 and 2020 dry, 2021 wet
- Strong influence weather conditions

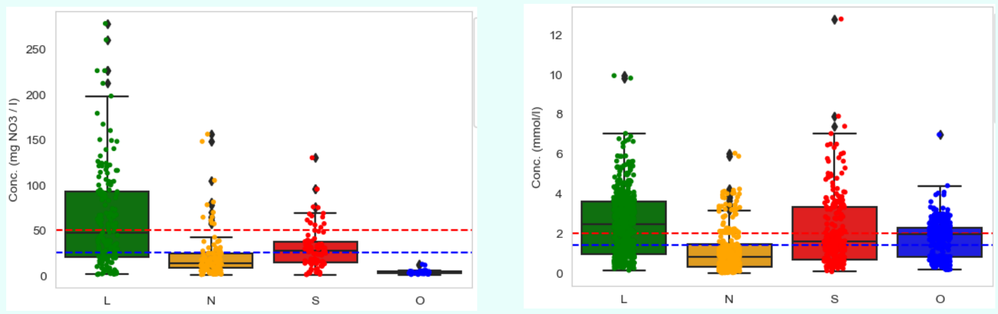




Summary of 'facts'

- 50% groundwater protection areas in agricultural use
- 85% dairy farming
- Slight trends: less grass, more grains, tree nursery and flower bulbs, corn stable
- Hardly impact of abolishing derogation (1/1/2023)
- Most areas exceed nitrate target value (Initiator-STONE-modelling)
- Hardness strongly enhanced in agricultural areas
- Pesticides widely present in young groundwater

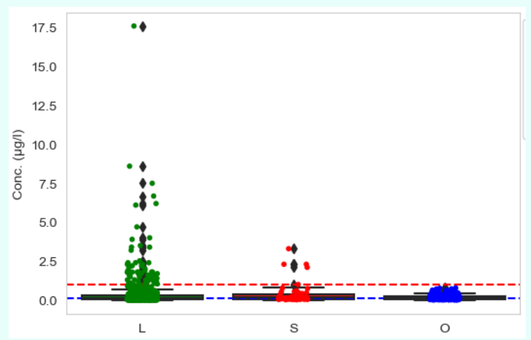
Early Warning Monitoring Nitrate and Hardness



Nitrate (left) and Hardness in shallow groundwater. L=Agriculture, N=Nature, S=Urban, O=Infiltration of Surfacewater. Number of filters = 466.

Early Warning Monitoring Pesticides

- Maize and potatoes
- Mainly herbices
  - Bentazon, MCPP
- Metabolites of
  - Chloridazon
  - Dimethenamid
  - Metolachlor



From Soil to Source

A new Vitens strategy on land use and agriculture

water voor nu en later

Vitens

Pillars:
- Long term agreements on sustainable use of the soil
- Farmers as neighbours and partners
- Formulating short term goals together
- Common monitoring tools
- Financing ecosystem services
- Stimulating ground mobility

martin.dejonge@vitens.nl
inez.deleau@vitens.nl
PO Box 1205, 8001 BE Zwolle
The Netherlands