

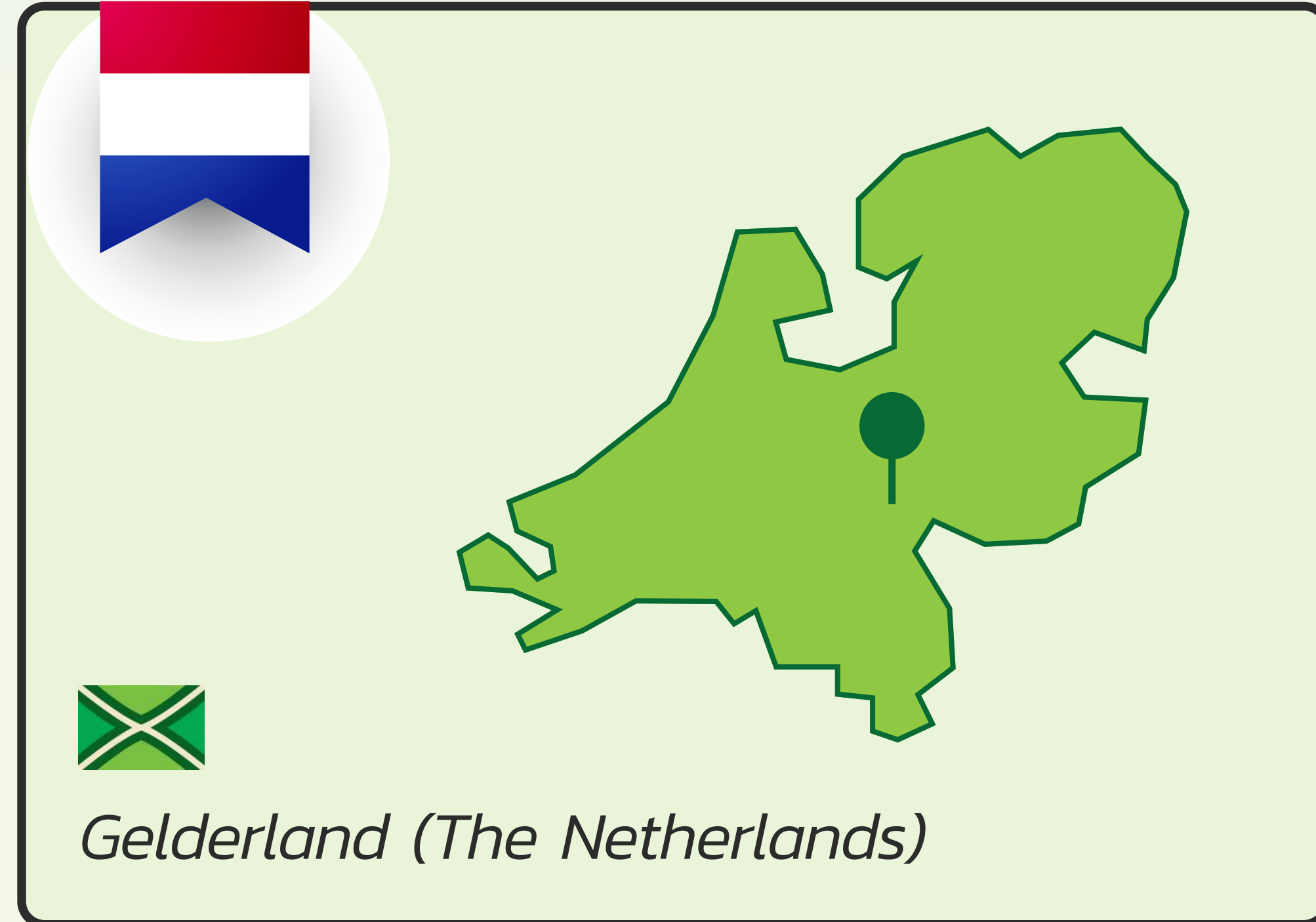


Cow Dairy Farming

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SOIL NEEDS ASSESSMENT

Drivers

- Climate change: extreme droughts, and extreme rainfall events. Mainly sandy soils
- Dutch water system is designed to drain surface water as quickly as possible by ditches and canalized rivers.
- Land consolidation, intensification and specialisation important for the farm profitability
- Policies and conditionality of the CAP (2023 – 2027); crop harvesting dates, fertilizer applications, mono-culture practices,
- Focus on more industry, housing, increased attention for nature areas

Pressures

- Droughts and extreme rainfall cause soil compaction or soil sealing.
- Decreased water quality due to manure surpluses, as water quality should meet the (inter)national standards.
- Increased use of heavy machinery on agricultural land and increase of monoculture, and the practice to let fields lay barren for a while to decrease the chance of pests and
- diseases related to mono-culture cropping.
- Increase of water demand (of agriculture but also due to urbanisation)

State

- Soil compaction, soil sealing, and soil that is too dry or too wet Insufficient water retention capacity
- Changes in water quality and quantity
- Sensors and monitoring programs should create awareness of the soil issues, but the sense of urgency is still not generally seen by landowners/users

Impact

- Decrease in the organic carbon matter in the upper soil, and increasing soil compaction
- The decrease of organic matter in the soil disrupts soil life, causing soil sealing, which leads to run-off of (applied) nutrients.
- The excessive use of fertilisers and pesticides has negatively affected the water quality. Yields became more insecure, especially in monocultures.

Response

- Small-scale initiatives to stimulate sustainable agriculture such as the decrease in use of heavy machinery, crop diversity, animal manure instead of synthetic fertilizers,
- nature inclusive farming on the boundary of nature areas.
- The measures (except carbon sequestration) are currently still based on voluntary actions. Rewards for ecosystem services can stimulate sustainable land use. Subsidies and policies should reward
- farmers for all measures that enhance ecosystem services, and not only a single element as is currently often done.
- Creation of short value chain towards a more sustainable region with a cautious approach of choice and quantity of products.

KEY MESSAGE

- Intensive agriculture, dairy farming and arable agriculture dominant land use, mostly on sandy soils.
- Climate change impacts water availability and soil health: soil compaction in the subsoil of sandy soils and in the topsoil in clay soils. Soil sealing in clayey soils.
- For resilient landscape many small-scale initiatives on extensive, nature-inclusive management are needed.
- Political landscape in the Netherlands and (inter)national regulations makes farming an uncertain business.
- The future of agricultural transition (livestock) is uncertain.
- The transitions towards sustainable soil management is long way.



REGIONAL INFORMATION

The region was characterized by small-scale farmers, mixed farming systems, incorporating both crops and different Livestock. The landscape was dominated by hedges and thickets, dividing the property of different farmers.

Dominant land use	Dairy Farming
Secondary land use	Arable Farming
Climatic Zone	Cfb = Temperate oceanic climate
Soil WRB classification	Podzol, Fluvisol, Anthrosol
Soil type	Podzol, Fluvisol, Anthrosol
Dominant topsoil texture	Sand (in the higher regions) , Clay (in the valleys)
Soil threat(s)	Too dry (Podzol, Anthrosol), Too wet (Fluvisol), Soil compaction (everywhere)
Representative for regions	areas with intensive dairy farming like Fladers, Northwest Germany and Denmark, but also regions where intensive agriculture is taking place close to Natura2000 areas.

STAKEHOLDERS INTERACTION

25 April 2023,
InnoFields of Royal Eijkelkamp – Uitmeentsestraat 19, Giesbeek (The Netherlands)

2 Policy and government

3 Soil and Other Advisors

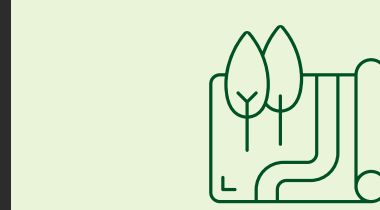
9 Business

12 Research community

5 Farmer/land Owner

5 CSOs and NGOs

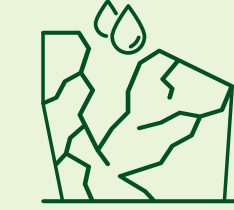
Relevant Soil Mission Objectives



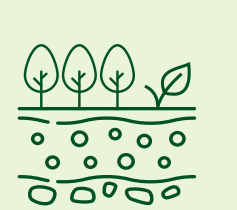
3. Stop soil sealing and increase re-use of urban soils



4. Reduce soil pollution and enhance restoration



5. Prevent erosion



6. Improve soil structure to enhance soil biodiversity