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Soil health – Netherlands

Margot de Cleen, Rijkswaterstaat
5th November 2024

The Netherlands, a delta country

Inhabitants: 18 Million
Surface: 41.500 km2
Inhabitants: 434 p/km2
Agriculture: 70 %
Water: 18 %

Our main challenges:

- Climate Change
- Healthy cities and housing
- Energy production and distribution
- Sustainable Mobility
- Sustainable food production
- Circular economy

Policies are determined by

cultural, social, economic and natural characteristics

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Soil Health related regulatory context

- The Netherlands have an integrated Environment and Planning Act which combines laws for spatial planning, housing, infrastructure, environment, nature and water. Our former Soil Protection Law is integrated in this new Act
- Each authority (national government, provinces and municipalities) has the obligation to develop an integrated vision on environment and spatial planning
- Within these visions and in spatial development water and soil should be guiding
- The Ministry of Agriculture, Food Security, Fishery and Nature has a National Program For Sustainable Agriculture; goal: 'all agricultural soils are sustainably managed in 2030'
- The Ministry of Infrastructure and Water Management is updating the soil regulation and preparing a National Program Soil, Subsurface and Groundwater aiming for vital soils, restoration of degraded soils, high value reuse of excavated soil
- The Ministry of Infrastructure and Water Management is preparing a National Environment Plan where healthy ecosystems are leading

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Soil management and Land planning

The NL National Strategy on Spatial Planning and the Environment is based on the following principles to balance and prioritize interests and tasks:

1. Combinations of land use before single use;
2. Central focus on characteristics and identity of an area (water and soil guiding);
3. Prevent shifting of responsibilities (each level of authority has its own responsibility)

Priority 1 Space for climate adaptation and energy transition

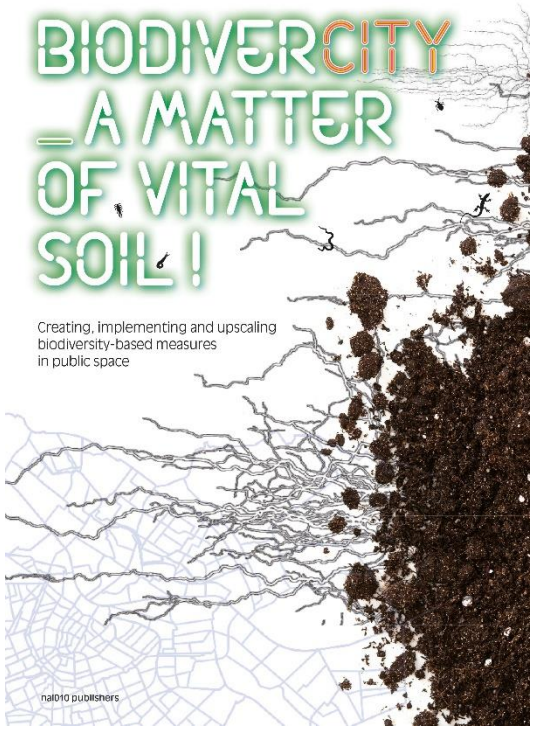
Priority 2 Sustainable economic growth potential

Priority 3 Strong and healthy cities and regions

Priority 4 Future-proof development of rural areas

Examples: multiple use

Source: BAM



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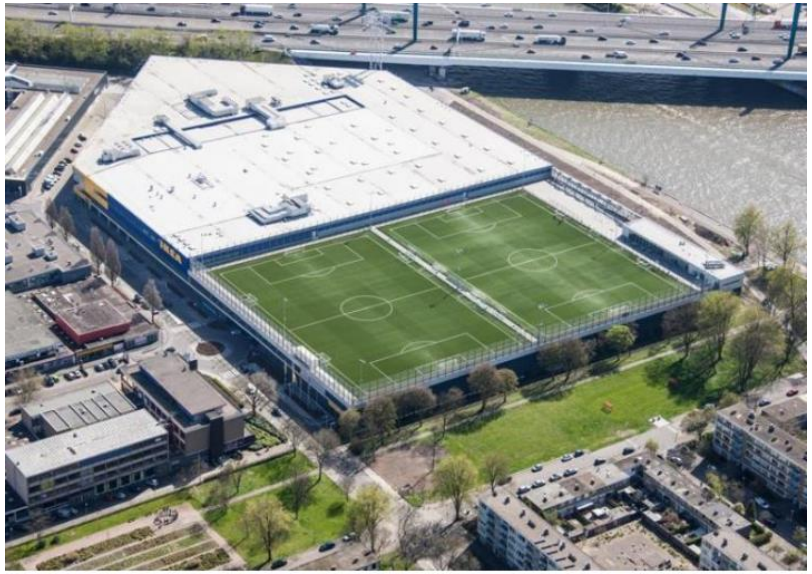

Source: Building Changes

De Oijse Bandijk, Ooijpolder. Foto Zoden aan de Dijk/Cyril Liebrand

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Soil management and Land planning 2

Water and soil guiding in spatial planning; leading principles :

- No passing on (to future generations, other regions, private-public)
- Take extremes into account
- Coherent approach for water hindrance, drought and soil
- Tiered approach for water safety (dikes, spatial planning, crisis management)
- Less sealing, less excavating, no contamination
- Integrated approach
- Comply or explain

Separate spatial regulations:

- Ladder for urbanization
- Preserve high value agricultural land
- Minimize claims for solar fields, logistic and data centers

Examples: NBS

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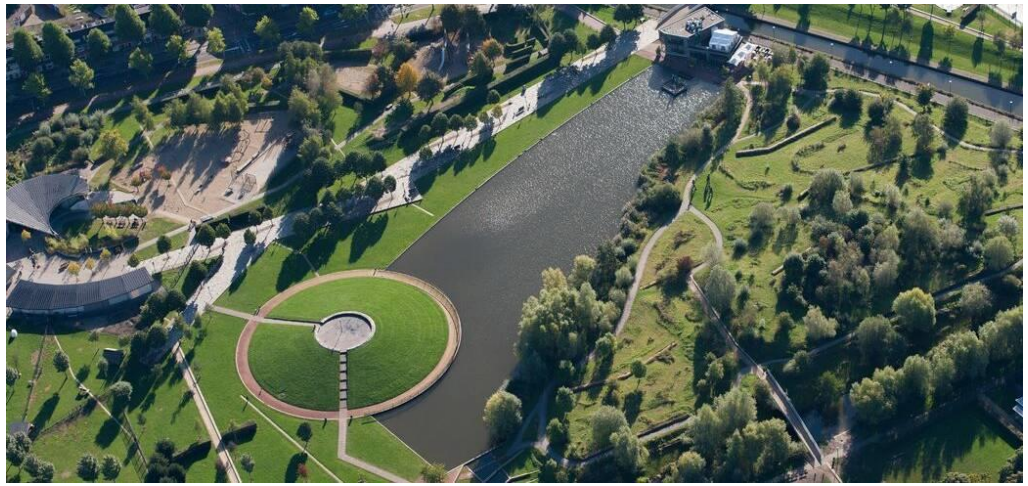
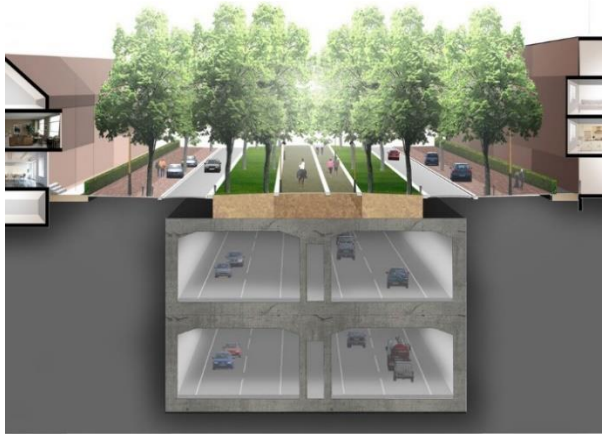
Examples: land recovery

- Brownfields become housing, meeting centra or parks
- Old landfills for recreation, housing or energy
- Rooftops on infrastructure become parks



Former gasworks Griftpark source: www.utrecht.nl

Col du VAM Former landfill: source www.drenthe.nl



Tunnel roof park A2 Maastricht: source ANP artist impression

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Soil management and Land planning 3

- NL Soil quality assessment (chemical) based on prevention, management and restoration
- National Soil Protection Law updated and part of E&PA;
- National approach for soil management (risk based, soil quality maps, soil passport); for agricultural soils program sustainable agricultural soils, using Soil Indicators (19), striving for circular use of excavated soils
- National approach for contaminated land (all local soil contamination without risk for environment, otherwise measures)
- Special program for PFAS and other diffuse contamination caused by substances of very high concern

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Which tools/ instruments are available?

- NL has a National register for soil and subsurface data (BRO)
- There is an open soil index and a national index soil indicators for agricultural soils
- Case studies: for land recovery, sediment recovery, planning with the subsurface, designing with soil in cities, circular land management, nature-based solutions with soil, sediment and water, bottom-up projects
- Knowledge programs for PFAS, soil subsidence, climate adaptation and spatial planning, soil trainers, peat restoration, soil life ….
- Learning communities for circular soil and land use, climate adaptation, vital urban soils
- Websites with information on legislation, guidance documents, methodologies, case studies etc.
- Awareness programs and education like planet soil, unharden your garden, clever gardens…

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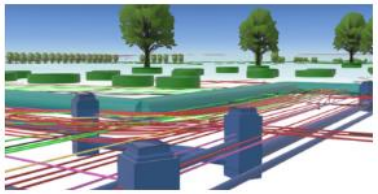
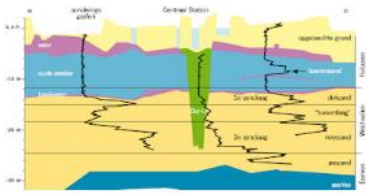
Which tools/ instruments are available?

BRO-data cruciaal voor ruimtelijke inrichting



Amsterdam deelt tools voor grondonderzoek

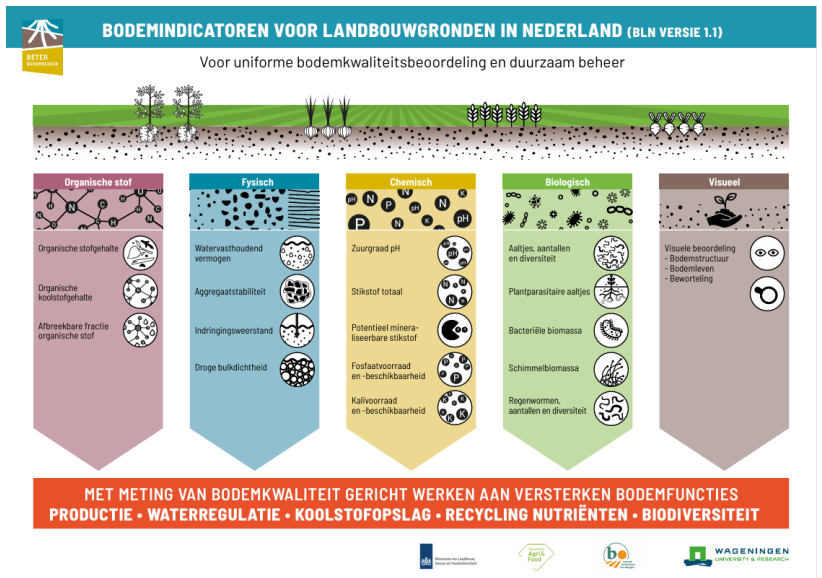


RWS over het belang van grondwaterdata

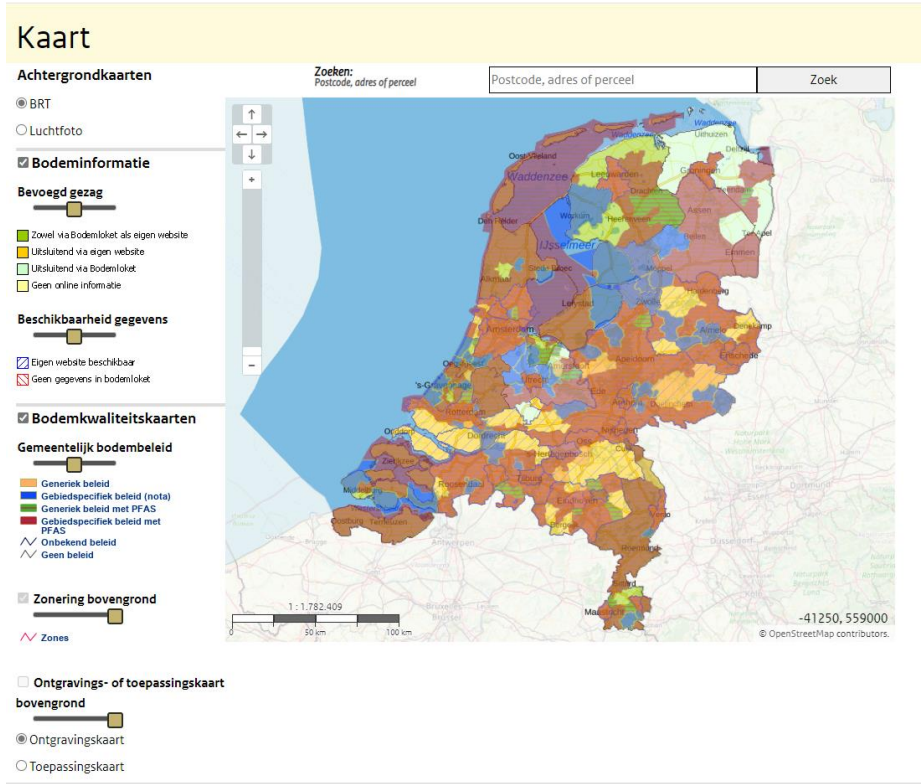
Masterplan Ondergrond Almere

BRO register soil and subsurface

Open soil index



Soil indicators agricultural soils NL



Soil information checker

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What research has been done or has been planned?

Some examples :

- Knowledge Program on PFAS
- Handbook on designing with/for vital soil in urban areas
- Life+ CO2SAND, upgrading degraded sandy soils with clay
- Soilpros, program on soil life in relation to ecosystem services
- Planet soil (awareness program) and validation center soil life
- Make aftercare part of soil management and give sites new use
- Thirsty Cities, make cities climate proof
- Horizon EU, Spongescapes, for increased resilience of communities against hydrometeorological extreme events
- National program soil subsidence and foundations
- Soil Valley, living lab for healthy soils
- …….

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What are the main challenges to be addressed?

How do we solve the spatial puzzle within our planetary boundaries?

How to respect the soil and water system as the motor in solving our societal challenges?

With PFAS and other contaminants of high concern: is it responsible to keep excavated land in the loop for circular use?

Healthy soils, to define by indicators or by their ability to perform ess?

How do we come to an integrated spatial approach where soil is part of the process instead of sectorial approaches which clash with another?

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Questions / Remarks?

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