



Development of a system for targeted soil quality measurement to be used in EJP-soil

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Background

- Dutch program on agricultural soils:
 - In 2030 all Dutch soils are to be managed sustainably
 - Baseline measurement of soil quality from 2019
- Indicator set needed: integration of two existing indicator sets resulting in Bodemindicatoren voor Landbouwgronden in Nederland – BLN (Soil Indicators for Agriculture in the Netherlands) to be used in national program (Hanegraaf et al., 2019).
- Currently, first draft of framework for specific soil quality indicator selection developed.
- Framework has potential for further elaboration in new EU-project starting in 2020 *EJP-soil, Towards climate-smart sustainable management of agricultural soils.*

Objective

- The development of a system for selecting relevant indicators from BLN set, for measuring soil quality based on a number of pre-defined goals.
- Preparatory actions for the start of the EJP-Soil project in Feb. 2020.

Project activities 2019

- Development of a system for measuring soil quality
 - Detailing the framework
 - Definition of objectives, soil functions, soil properties and soil indicators and relations between these
 - Definition & description of indicators and measurement methods (protocols)
 - Building the total system
 - Discussions with stakeholders
 - Communication
- Preparatory actions EJP soil

Results 2019

- Definitions of soil functions and soil properties
- First prototype of system fully developed for selected case studies
- Workshop with stakeholders for finetuning
- Article about the framework in "Bodem"
- Various presentations at National Soil Summit, within PPS Beter Bodembeheer, workshop on economic value of Soil Quality, internal WUR

Value creation

- Fulfill the government's desire to measure soil quality.
- Contribute to the quantification of issues (targets) that have an interface with soil such as carbon storage, nutrient emissions, climate adaptation, biodiversity, etc.
- Implement framework in various projects in the Netherlands to improve soil quality to make scientifically sound choices on indicators
- Work on filling in blanks in the area of indicators and relationships between soil functions, soil properties, soil indicators and soil management.
- Test / adjust the system so that this system can also be used in other European countries.

Figures

Left: Example of a limited elaboration of the framework. The functional relationships between the building blocks of the system are shown. The diagram is run from left to right, whereby it is determined which relationships are important to derive the most important indicators.

Right: Elaboration of the figure left with the assessment of soil quality. This assessment can be done on soil properties, soil functions or the objective.

