



DEMETER

'Sustainable and integrated soil management
to reduce environmental effects

Presentation
24th of September 2013

DEMETER and LIFE+

- The 31st of May 2011: Application DEMETER to European Commission
- August 2011: Approval EC
- LIFE10 ENV/BE/699
- The 1st of January 2012: Start
- March 2016: Ending
- Projectbudget: 1.907.092 Euro
- European contribution: 952.353 Euro (49,96 % of the total budget)

Who's in?

Cooperation between?



PARTNERS

- DEMETER is a collaboration between three complementary institutions:
 - Flemish Land Agency (VLM - BE as lead partner)
 - Extensive experience at company level: guidance for farmers, communication and awareness campaigns
 - Ghent University (UGent - BE)
Faculty of Bioscience Engineering - Department of Soil Management
 - Specialized in the area of scientific and practical research on soil and nutrient management and environmental impact
 - Nutrient Management Institute (NMI - NL)
 - Strong player at both levels: they conduct applied research on soil and give practical advice to farmers

And other stakeholders

Numerous other stakeholders:

- Agricultural organisations
- The farmers
- Policy
- Research organisations
- Government organisations



Through reflection group and various communication channels.



What?

Soil as base



PROBLEM

Need for an integrated approach between two environmental problems, namely:

- 1) Reduction of organic matter in soil**
- 2) High concentrations of nitrate and phosphate in surface- and groundwater**

1) REDUCTION OF SOIL ORGANIC MATTER

- Important key indicator of good soil quality and functionality. An optimal amount of organic matter in the soil leads to:
 - Reduction of erosion
 - Higher resistance to soil compaction
 - Rich habitat for living organisms (biodiversity)
 - Higher buffer capacity and better hydrological regime
 - ...
- Decrease = Direct risk to soil fertility decline
 - Reduced nutrition for soil organisms
 - Declining quality of the soil structure
 - Disruption of buffering against erosion, water absorption capacity, aeration of the soil,...



2) HIGH NITROGEN AND PHOSPHATE IN SURFACE AND GROUNDWATER LEVEL

- High level concentrations cause severe pressure on soil, water and air. The agricultural sector provides the largest emissions of these substances to the environment.

Direct Threats:

- Water pollution
- Loss of biodiversity
- Revenue decline of farmer
- ...



CONNECTION BETWEEN BOTH PROBLEMS

- Focus on legislation (eg. Water Framework Directive and Nitrate Directive) and execution of legislation on reducing negative impacts manure surplus.



- Decreased concentrations of nitrogen (N) and phosphorus (P) by decreased application of manure and other organic fertilizers.



- Strong focus on one problem (nitrate reduction) is threatening the amount of organic matter in the soil.

Something old, something new?

- Both problems are connected
- Scientific research and decision support systems already exist
- Though, insufficient attention to integrated approach to both problems
- Insufficient flow of scientific information to agricultural sector



- Increasing the amount of organic material
DOES NOT NEED TO LEAD TO A HIGHER NITRATE RESIDUE!

PRACTICAL IMPLEMENTATION OF SCIENTIFIC RESEARCH

Monitoring and guiding farmers towards a management that aims for a sustainable soil use (by increasing the organic matter content of the soil) coupled with a balanced management of nutrients

HOW?



SUMMARY OF THE PROJECT EXECUTION

- Project timing: 4 years
- Development, adaptation and supplying an integrated calculation program DEMETER TOOL (DST)
- Farmers guidance (2013-2015)
- Flanders: 50 companies in 5 regions
- The Netherlands: 30 companies in 1 region
- Communication: demonstration days, seminars, website, exhibitions ...
- Monitoring environmental results
- ...

Decision Support Tool

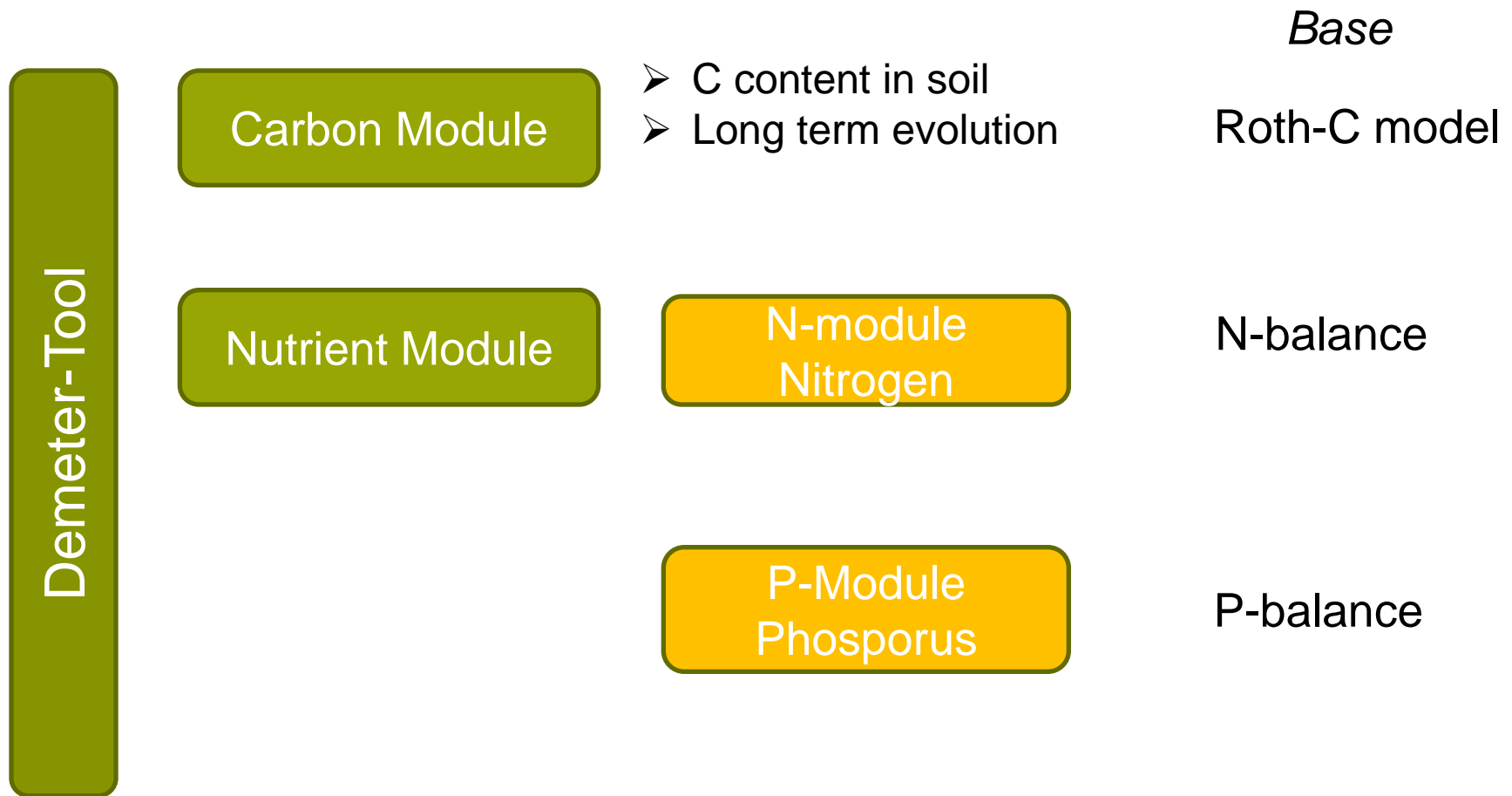
■ Decision Support Tool(DST)

- Developed by all projectpartners
- Aimed at both sustainable soil and nutrient management
- Simple / user friendly
- Practical application and translation of scientific research
- Online for free
- Basis for guidance of farmers



- Using DST during the farmers guidance between 2013 and 2015

Demeter- Tool : Structure



Demeter- Tool : Development

Version

Timing

Target

β-Version
(testversion)

December 2012

Projectpartners

Demeter DST 1.0

January 2013

Projectpartners → Participating
farmers (Indirectly)

Demeter DST 2.0

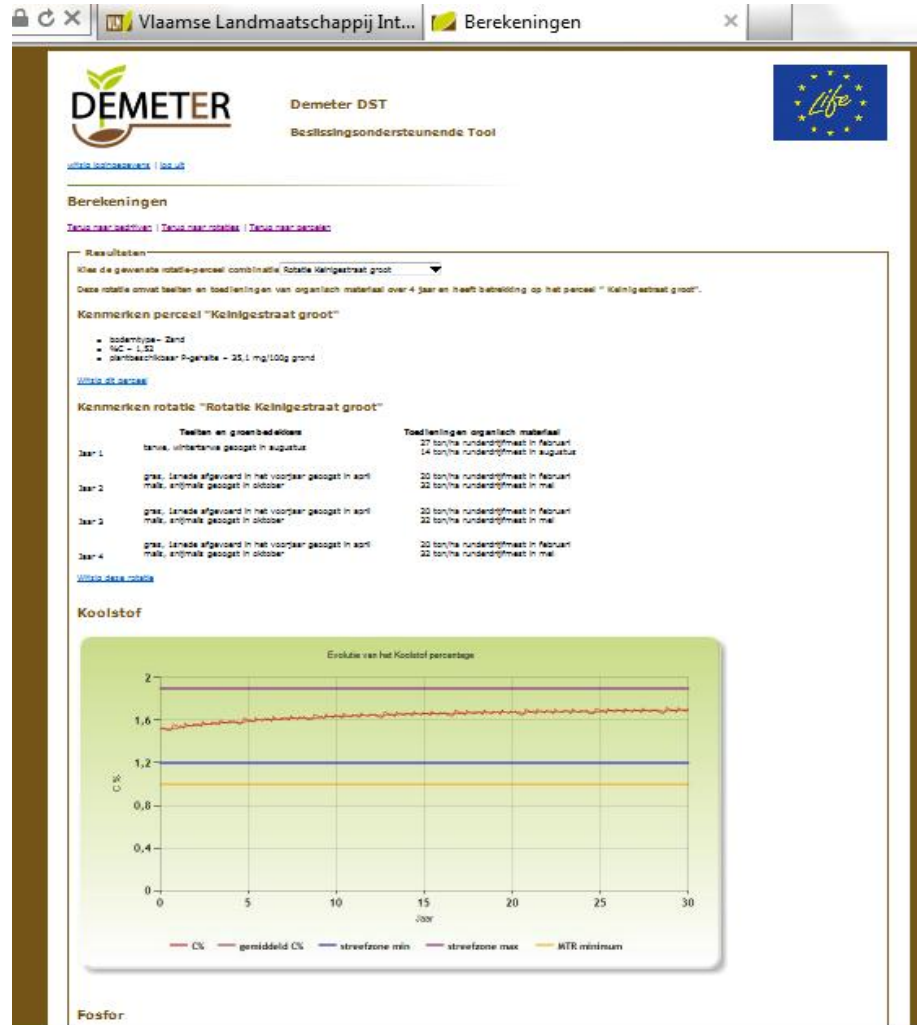
Autumn 2013

Participating Demeter farmers

Demeter DST 2.1 of 3.0 2014

Everyone

Example Demetertool output

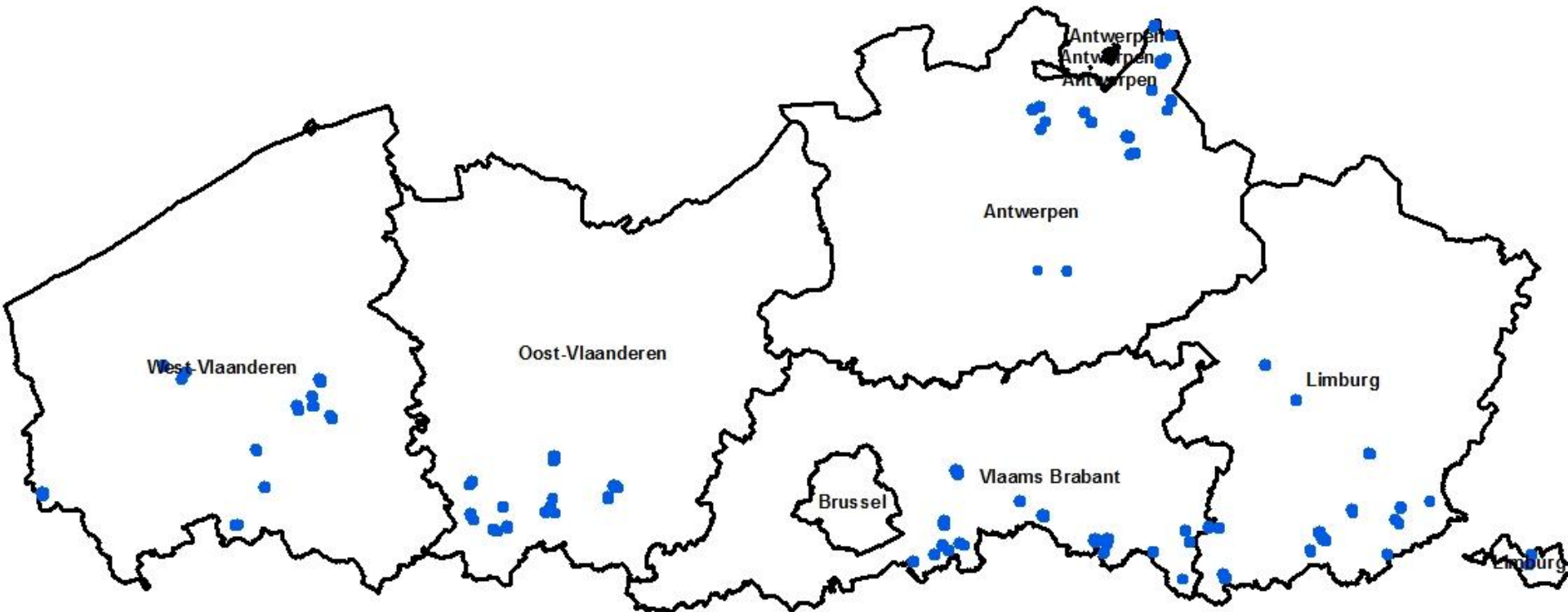


CASES: Flanders

■ Case Selection

- Voluntary base
- Diversification in farm type
- **50 farms** in 5 pilot areas in Flanders
- Flemish farms: individual visits by BAS-councillors: screening and monitoring for 3 years (Advising and Sensitizing Unit of the Manure Bank)
- In 5 pilot regions (one per province) where a significant reduction in the amount of soil organic matter was determined

Cases: Flanders

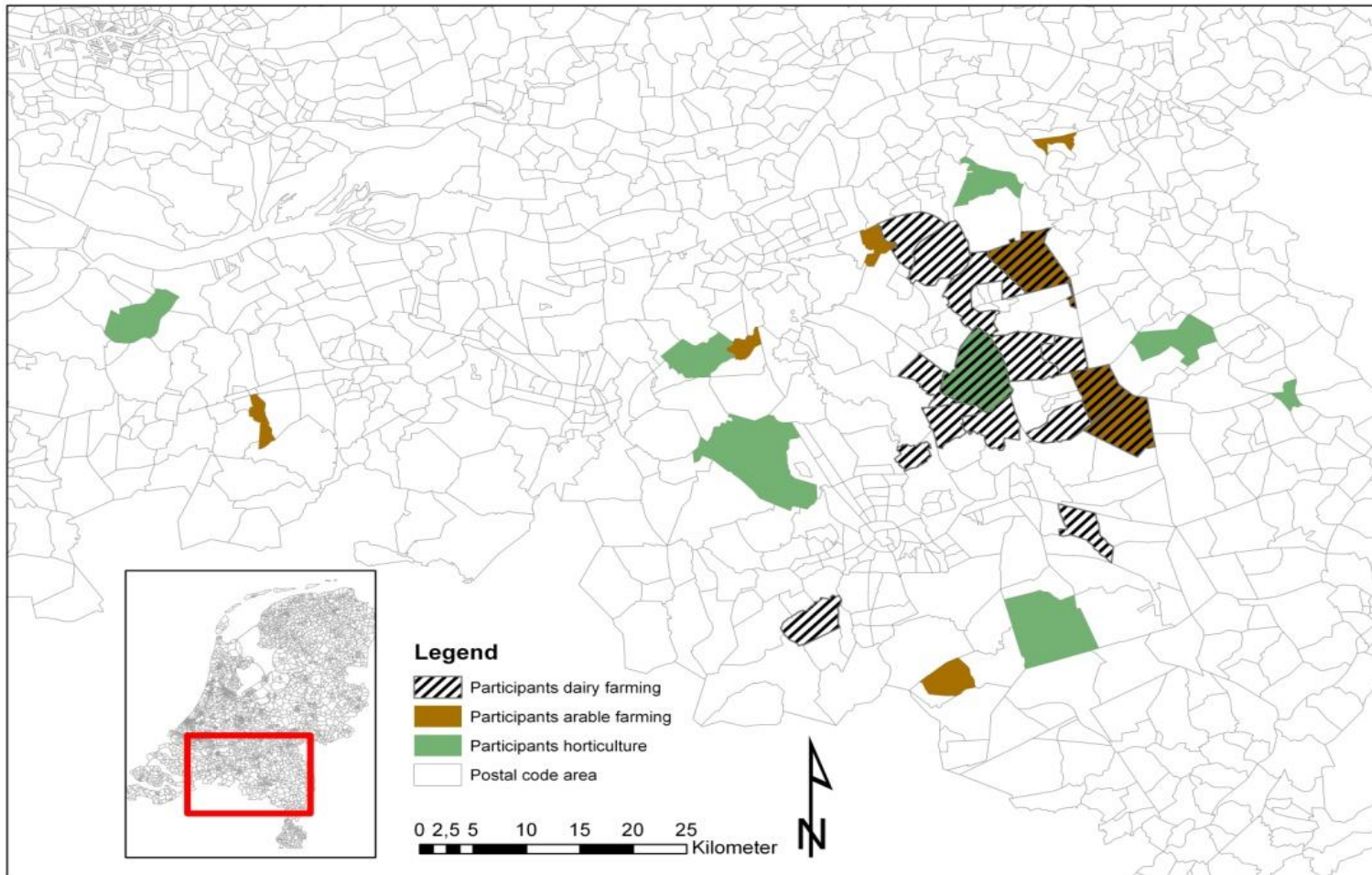


CASES:THE NETHERLANDS

■ Case selection:

- On preliminary base
- **30 farms** in 1 pilot region in the Netherlands
- Dutch farms: group sessions
- Diversification of farm type
- In regions where **organic matter contents** are decreasing, while **nitrate contents** in groundwater and **phosphate saturation degree** of soils are relatively high.

CASES:THE NETHERLANDS



TIMING

When?

TIMING

■ 2011

- Preliminary discussions among partners, designing partnership agreements, communication (a.o. Werktuigendagen (fair), recruitments,...

■ 2012

- Gathering information/data
- Selection of the pilot areas and farms
- Training the BAS-councillors
- Development of the website
- Development of Decision Support Tool(DST)
- ...



TIMING

- 2013 - 2015: Implementation phase
 - Implementation DST
 - Improving and adjustment the DST
 - Sampling in the selected farms
 - Guidance and monitoring of the selected farms
 - ...



TIMING

■ 2016

- Final report
- After Life strategy
- Other projects?



Need more information?

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[LIFE+](#)

QUESTIONS?

