



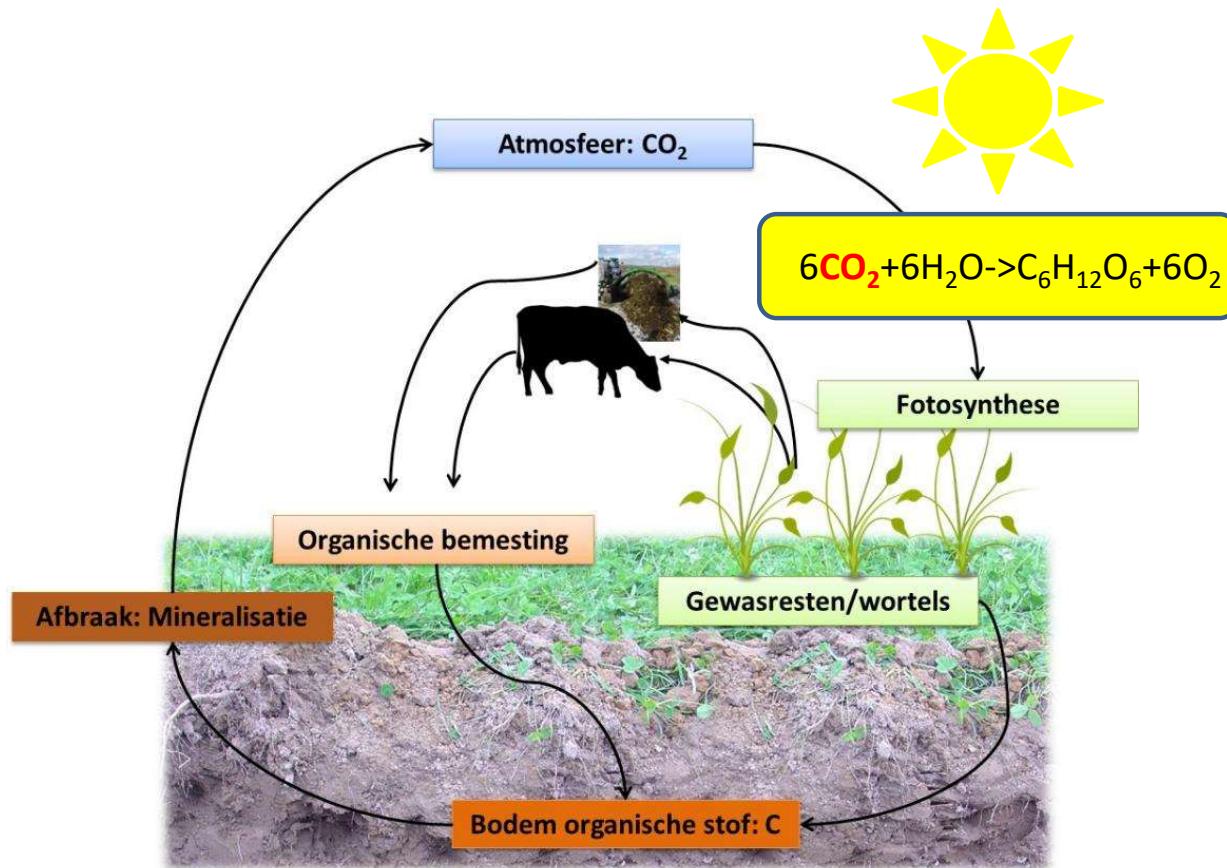
# Eén van de bodemdiensten uitgelicht - het vastleggen van **koolstof** in de bodem

Greet Ruysschaert

Webinar over bodemgezondheid in (beleids)perspectief – 3/02/2023  
Organisatie: Nederlandse Bodemkundige Vereniging en EJP SOIL



# Hoe werkt koolstofopslag in de bodem?



# Hoe werkt koolstofopslag in de bodem?

C input + stabiliteit

Organische meststoffen



Gewassen (in-field en randen)



Mineralisatie

Gereduceerde bodembewerking

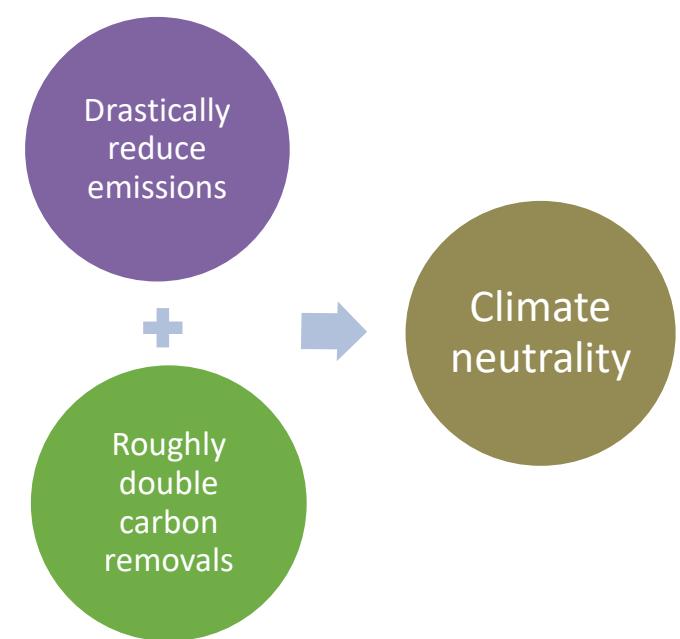
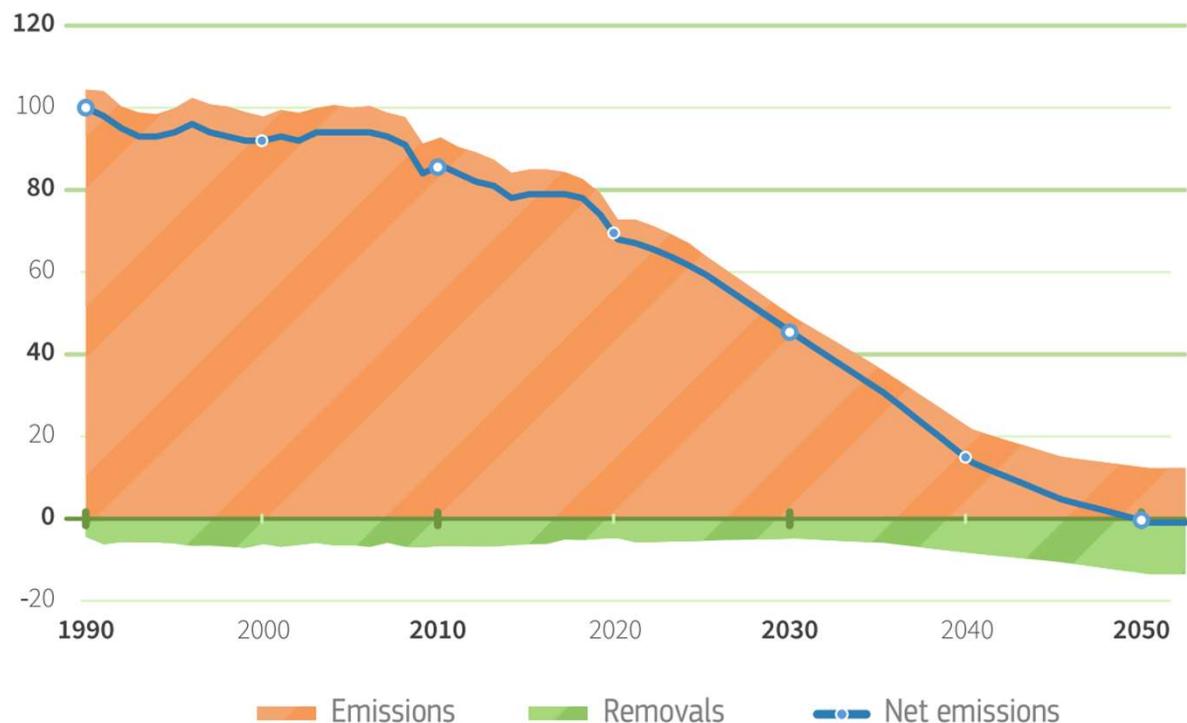


Vernatting



Interreg  
North-West Europe  
Carbon Connects

## Rol van koolstofopslag voor een klimaatneutrale maatschappij



GHG projections for climate neutrality  
1990 GHG emissions = 100  
Source: EU 2030 Climate Target Plan

## Europese klimaatdoelstellingen

### Climate Law

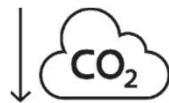
- EU objective of **climate neutrality** by 2050

### Land Use, Land Use Change and Forestry (LULUCF) Regulation

- ambitious target for net carbon removals in soils, forests and wood products: **-310 Mtonnes by 2030**

# Impact lokaal niveau

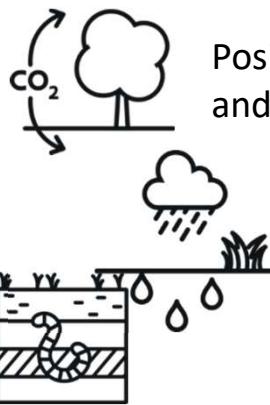
Noden beleid



Aantonen inspanningen landbouwers behalen klimaatdoelstellingen



Kansen landbouw



Positieve impact van landbouw op klimaat door koolstofopslag (negatieve emissie) en andere bodemecosysteemdiensten

Werken aan een veerkrachtige bodem

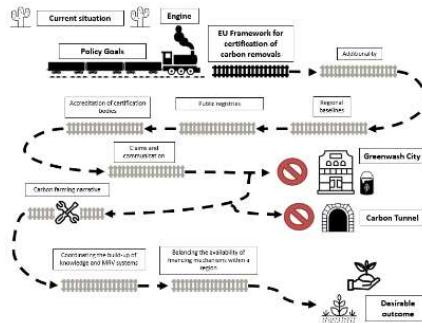
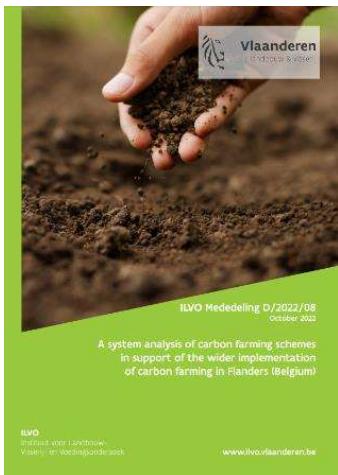


CO<sub>2</sub>-certificaten als verdienmodel (publiek en/of privaat)



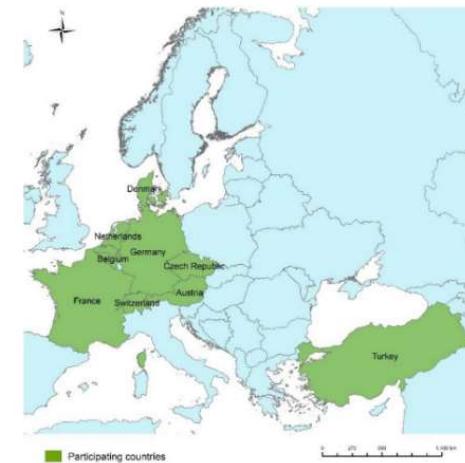
Lokale besturen

# Koolstoflandbouw als verdienmodel in volle ontwikkeling



Roadmap ideas in progress

Systeemanalyse

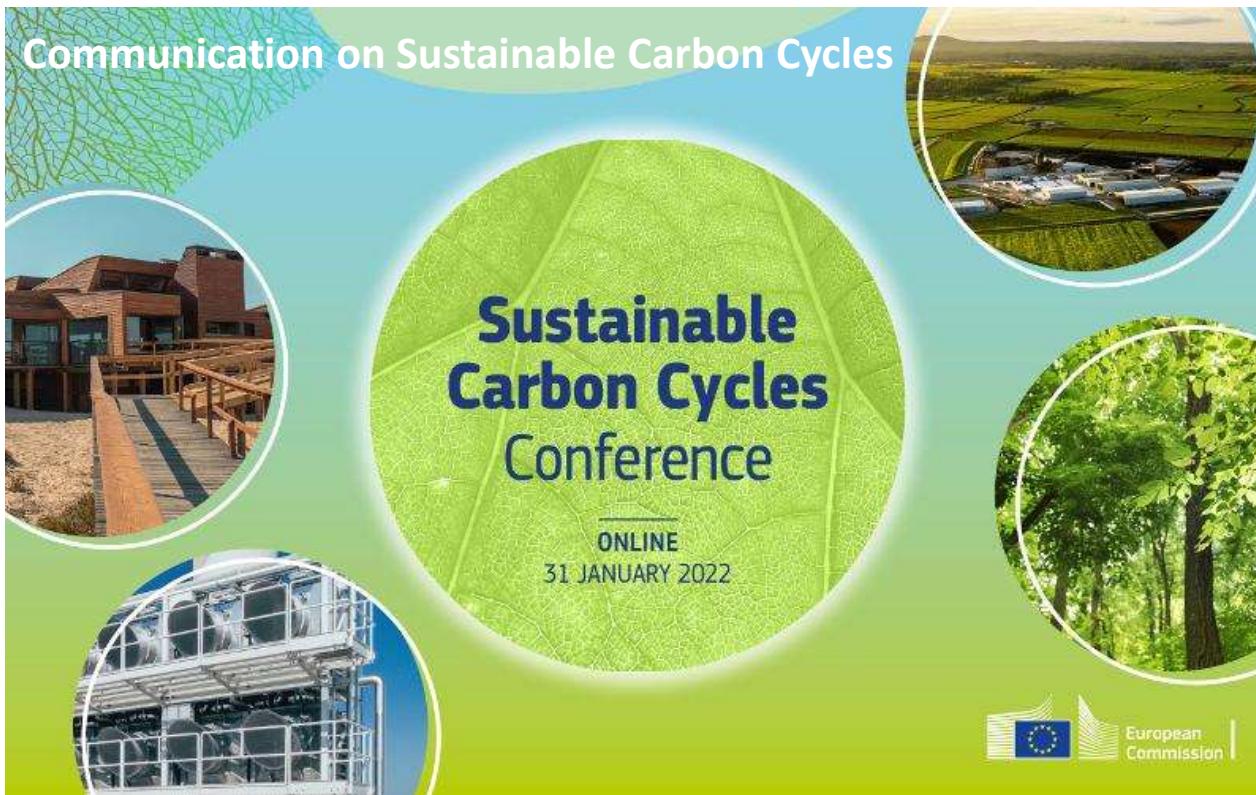


## PARTNERS

- Department of Agroecology, Denmark
- Wageningen Research, The Netherlands
- Flanders Research Institute for Agriculture, Fisheries and Food, Belgium
- National Research Institute for Agriculture, Food and Environment, France
- Johann Heinrich von Thünen-Institute, Germany
- Agroscope, Switzerland
- Austrian Agency for Health and Food Safety, Austria
- Czech University of Life Sciences, Czech Republic
- Ministry of Agriculture and Forestry, General Directorate of Agricultural Research and Policies, Turkey



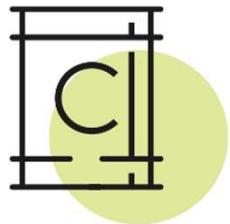
# Beleid op Europees niveau



*“Every land manager should have access to verified emission and removal data by 2028 to enable a wide uptake of carbon farming”*

# Beleid op Europees niveau

Commission proposal for a Carbon Removal Certification Regulation (30/11/2022)



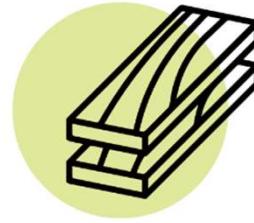
## PERMANENT STORAGE

*E.g. Bioenergy with Carbon Capture and Storage (BECCS), Direct Air Carbon Capture and Storage (DACCs)*



## CARBON FARMING

*E.g. Af/re-forestation, improved forest management, agroforestry, soil carbon sequestration, peatland restoration*



## CARBON STORAGE IN PRODUCTS

*E.g. Use of wood-based materials in construction, long-lasting Carbon Capture and Utilisation (CCU)*

# Beleid op Europees niveau

**Net carbon removal (CR) benefit = CRbaseline – CRtotal – GHGincrease > 0**

- ⇒ Koolstofopslag + vermeden CO<sub>2</sub> emissies
- ⇒ Geen gereduceerde emissies (vb verlaagde CH<sub>4</sub> emissies)

## QU.A.L.ITY criteria for all carbon removals



### QUANTIFICATION

Accurate monitoring



### ADDITIONALITY

**Regionale baseline**  
(gaat verder dan wettelijke en wat gangbaar is)-> pionierlandbouwers



### LONG-TERM STORAGE

**NIET permanent ->**  
Veronderstelling terug naar atmosfeer na monitoring periode



### SUSTAINABILITY

**'Do NOT significantly harm' principe** – geen negatief effect en liefst positief effect op de omgeving

# Monitoring, reporting, verification

QUANTIFICATION



Kost-nauwkeurigheid  
Lage administratieve last

Robuust kennissysteem  
+  
data infrastructuur

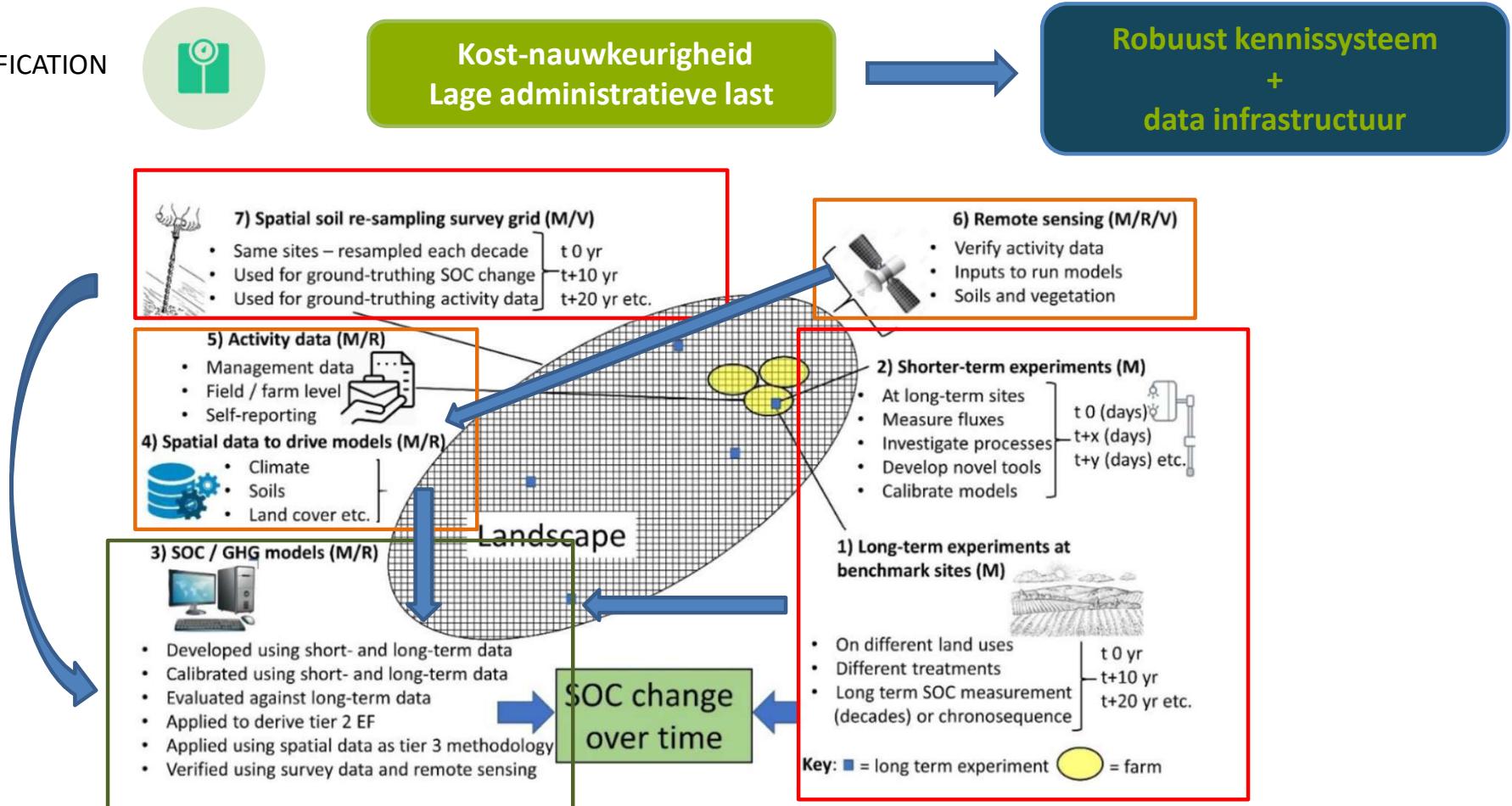
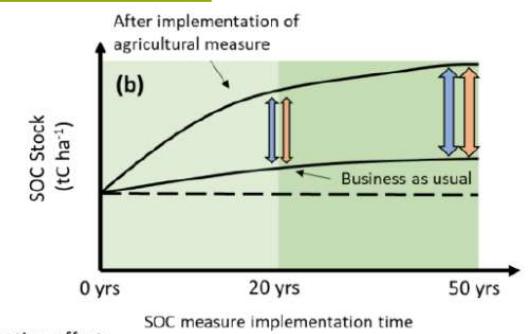


Figure 2. New vision for a global framework for Monitoring, Reporting and Verification of SOC change (Smith, Soussana et al. 2019, Global Change Biology)

# Koolstofopslag potentieel + trade-offs

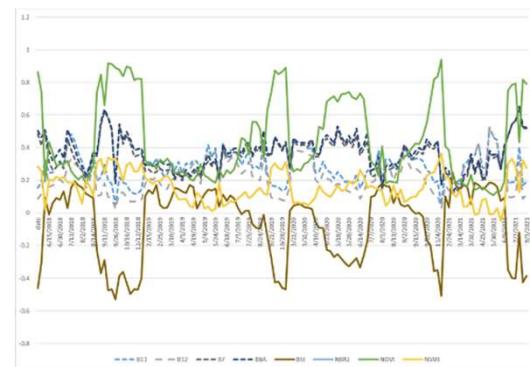
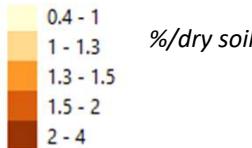
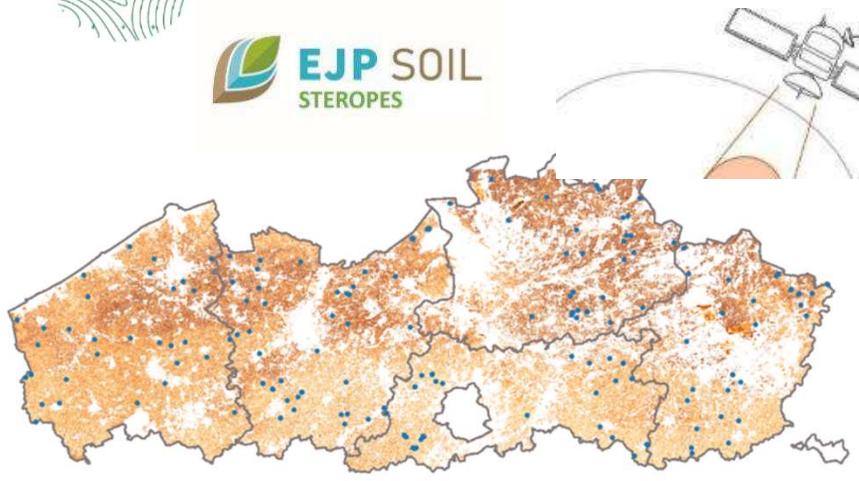


**EJP SOIL**  
European Joint Programme

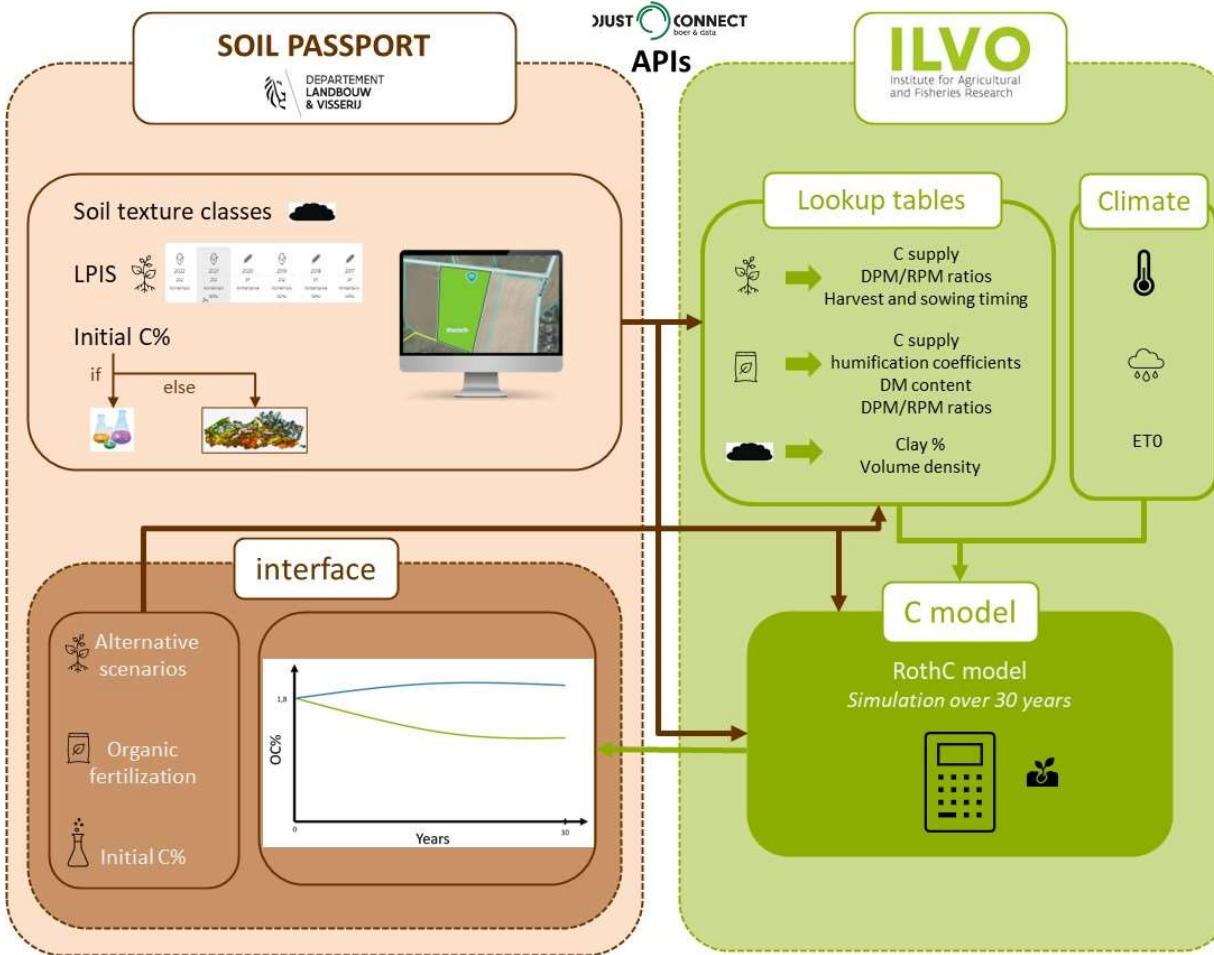
**CARBSEQ**

 **EJP SOIL**  
**SUMMIT**

# Koolstofmonitoring

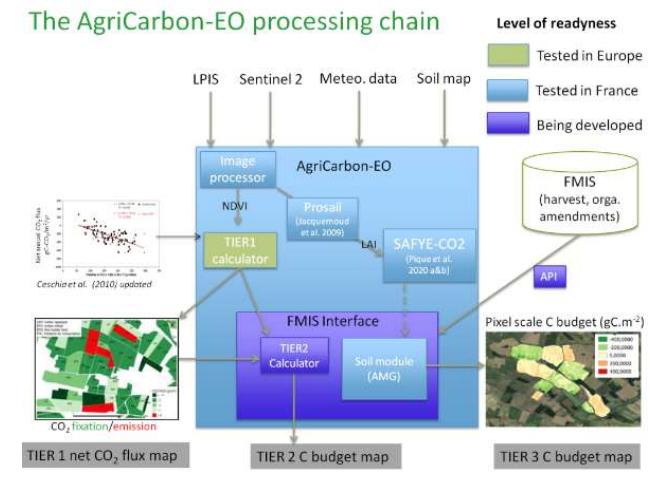
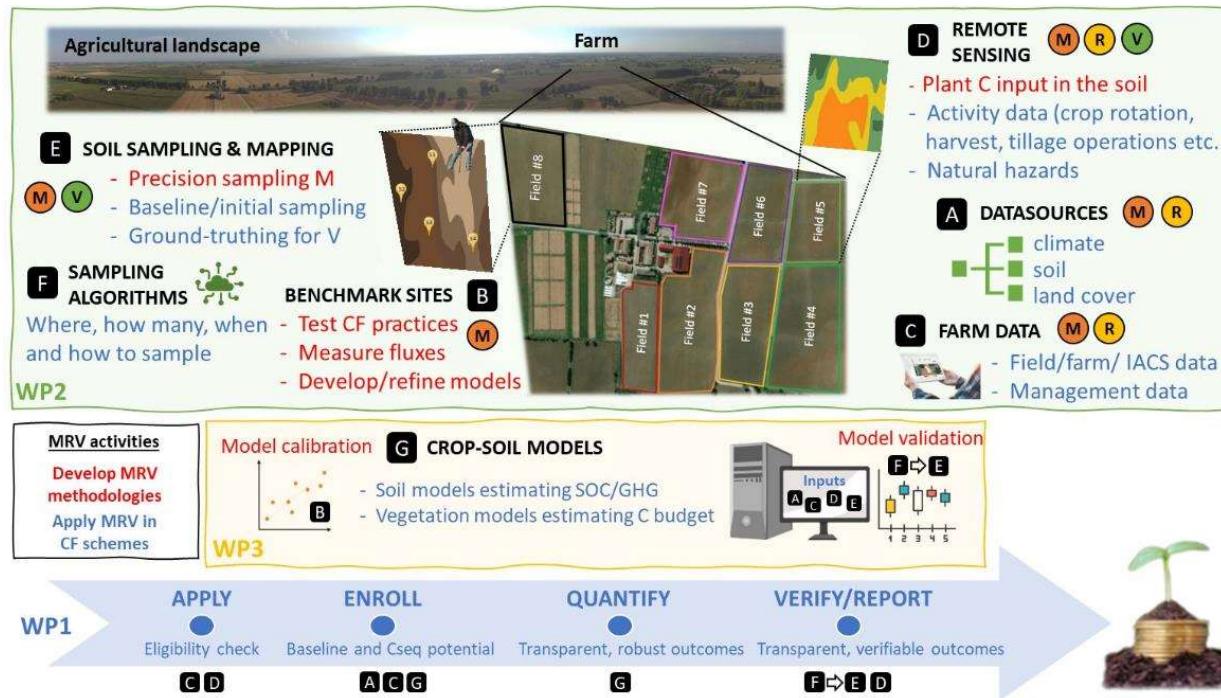


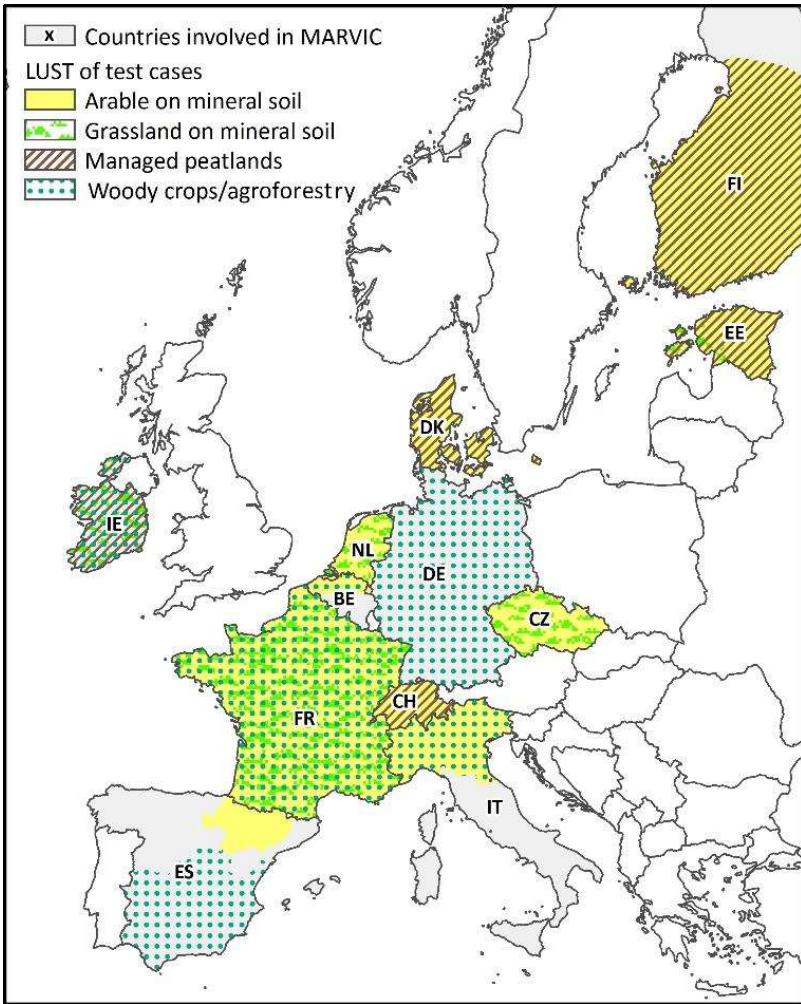
# Data connecties en -infrastructuur



# MaRVic: MRV – Framework (2023-2027)

HORIZON-MISS-2022-SOIL-01-05: Monitoring, reporting and verification of soil carbon and greenhouse gases balance





## Doelstelling MaRViC

Het ontwikkelen en testen van een kader voor het **ontwerpen van geharmoniseerde, context-specifiek MRV-systemen** voor het monitoren van koolstofvoorraad in de bodem en houtachtige biomassa en van bodememissies.

BE: ILVO (coordinatie)

CH: Agroscope

CZ: Czech University of Life Sciences (CZU)

DE: University of Freiburg

DK: Aarhus – University of Copenhagen

EE: Estonian University of Life Sciences (EMU)

ES: SAE – CSIC

FI: Finish Meteorological institute (FMI)

FR: INRAE – Agrosolutions

IE: Teagasc

IT: Universita cattolica del Sacro Cuore (UCSC) – Universit of Tremo

NL: WR

# Dank u wel!

## Vragen?

**Instituut voor Landbouw-,  
Visserij- en Voedingsonderzoek**  
Burg. Van Gansberghelaan 109  
9820 Merelbeke – België  
T + 32 (0)9 272 27 00

Greet.Ruysschaert@ilvo.vlaanderen.be  
[www.ilvo.vlaanderen.be](http://www.ilvo.vlaanderen.be)