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Setting the scene for carbon farming: best practices and challenges: Developing C farming schemes in a soil health perspective

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Setting the scene for carbon farming: best practices and challenges:

Developping C farming schemes in a soil health perspective

Claire Chenu

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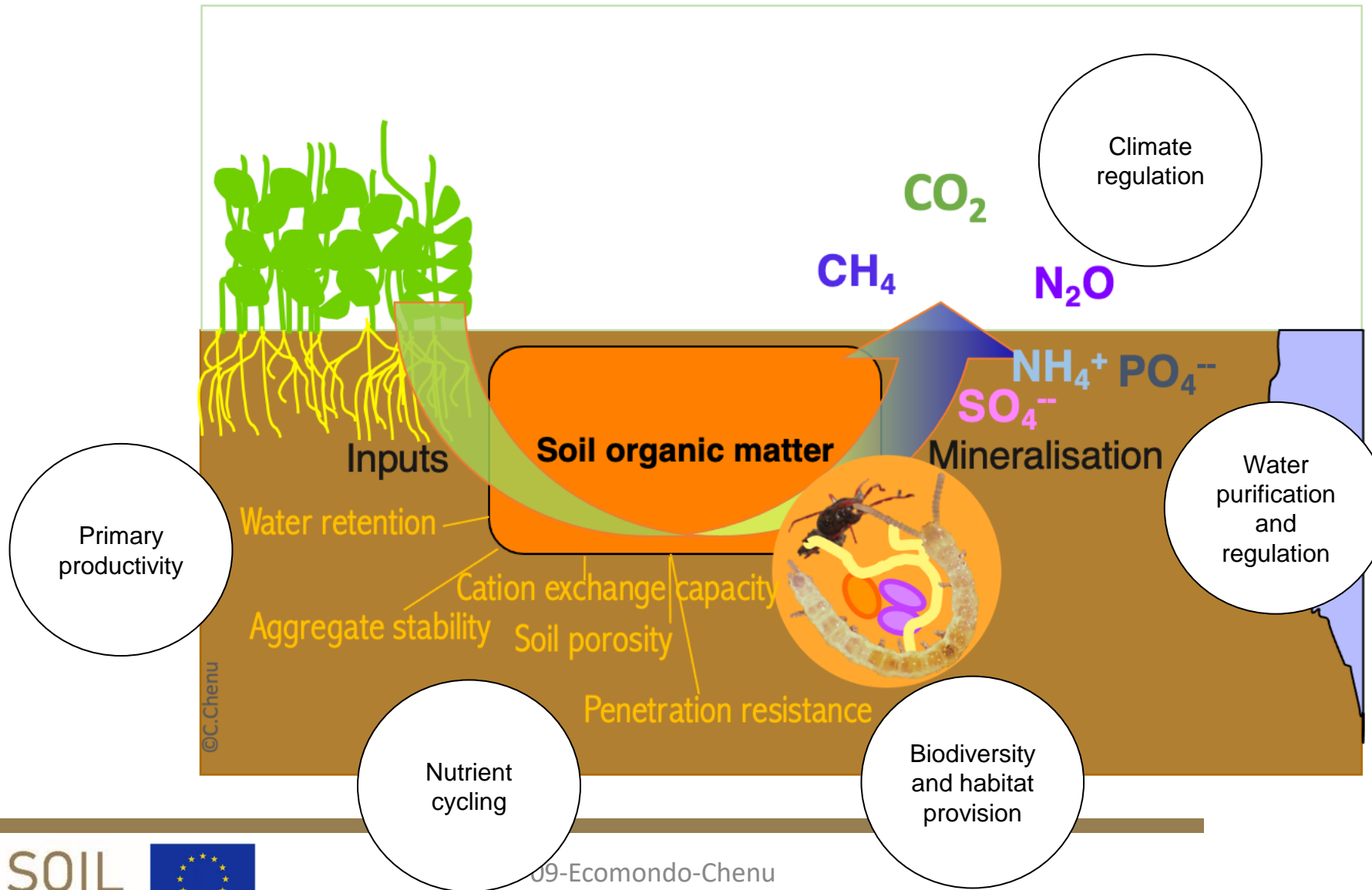
EJP SOIL
European Joint Programme

2023-11-09-Ecomondo-Chenu

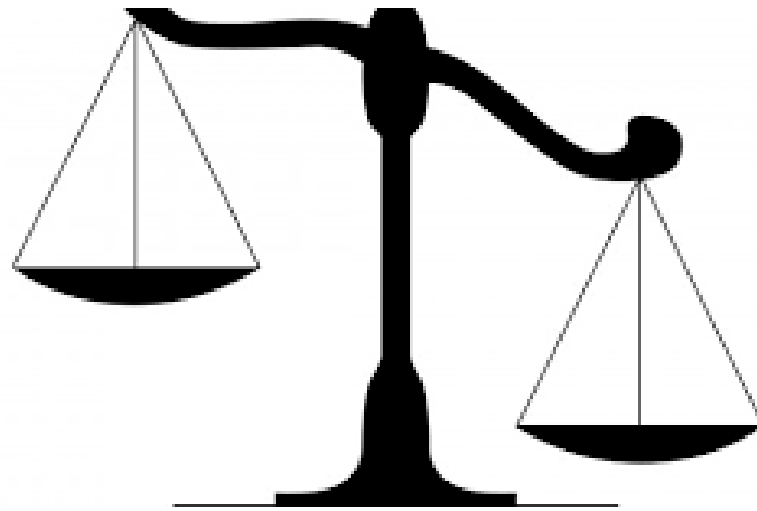
EIP SOIL has received funding from the European Union's Horizon 2020 research and innovation programme; Grant agreement No 862695



Why ? Soil organic matter is key to soil quality and soil health



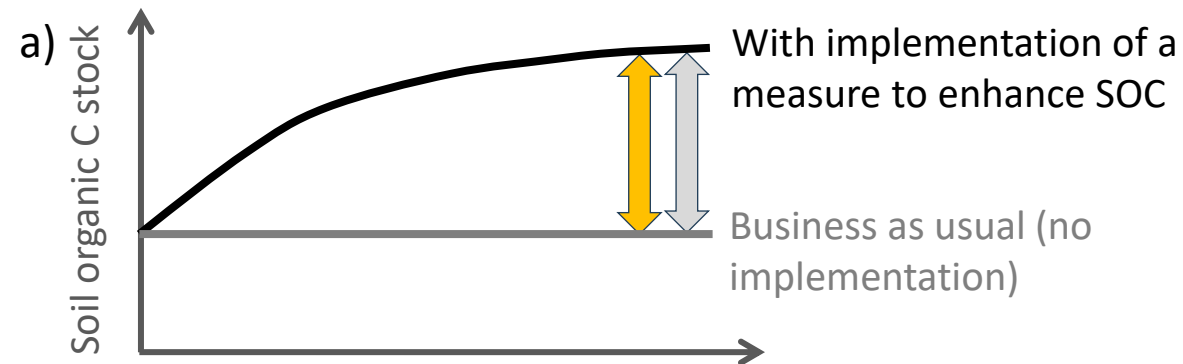
What does it mean? A wider perspective than soil C



Accounting for synergies and trade-offs

Expected outcome?

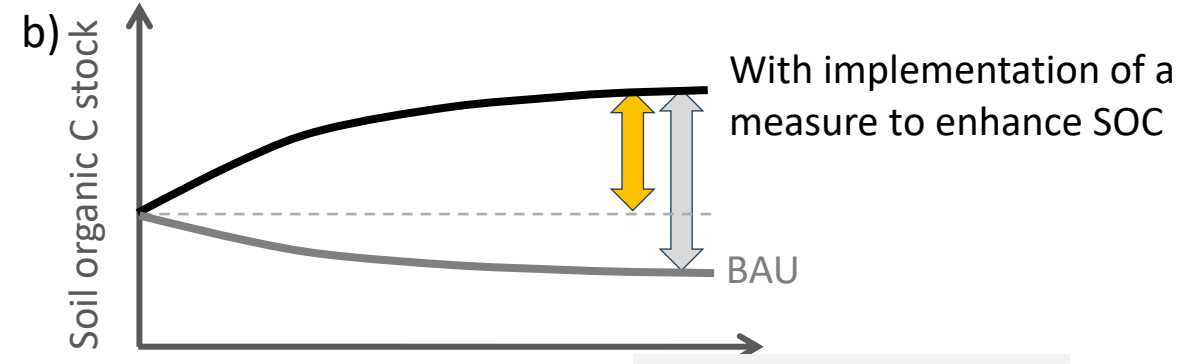
More Soil Organic Carbon for GHG mitigation & for soil health improvement



Time since implementation of a measure to enhance SOC

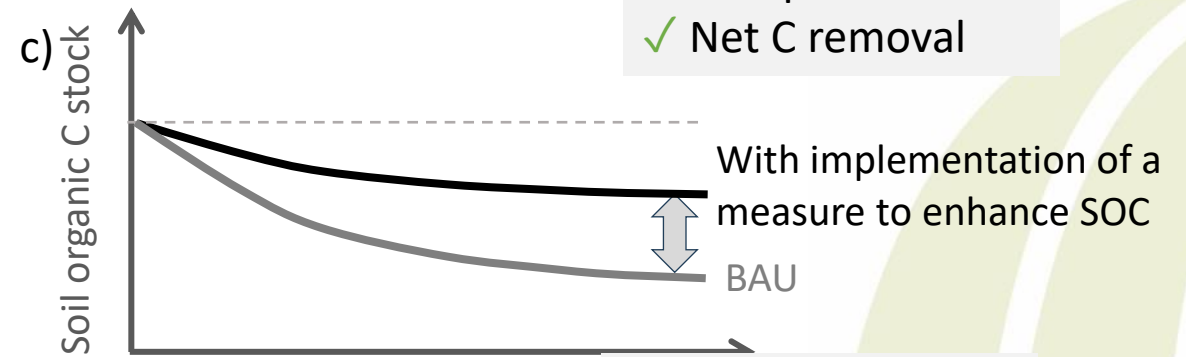
- ✓ SOC stock accrual
- ✓ C sequestration
- ✓ Net C removal

↕ SOC stock accrual ↕ C sequestration in soil



Time since implementation

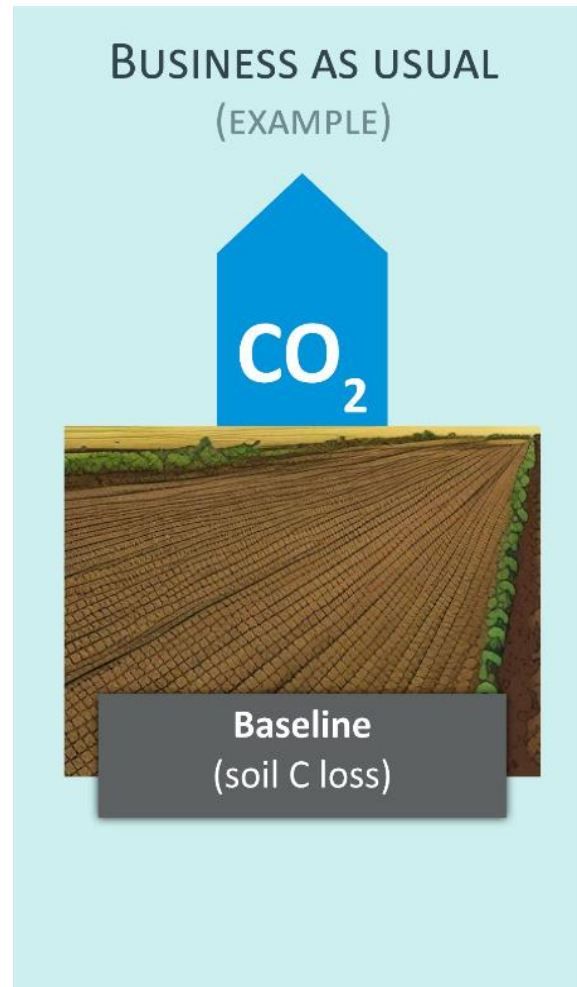
- ✓ SOC stock accrual
- ✓ C sequestration
- ✓ Net C removal



Time since implementation

- ✓ SOC stock accrual
- ✗ C sequestration
- ✗ Net C removal

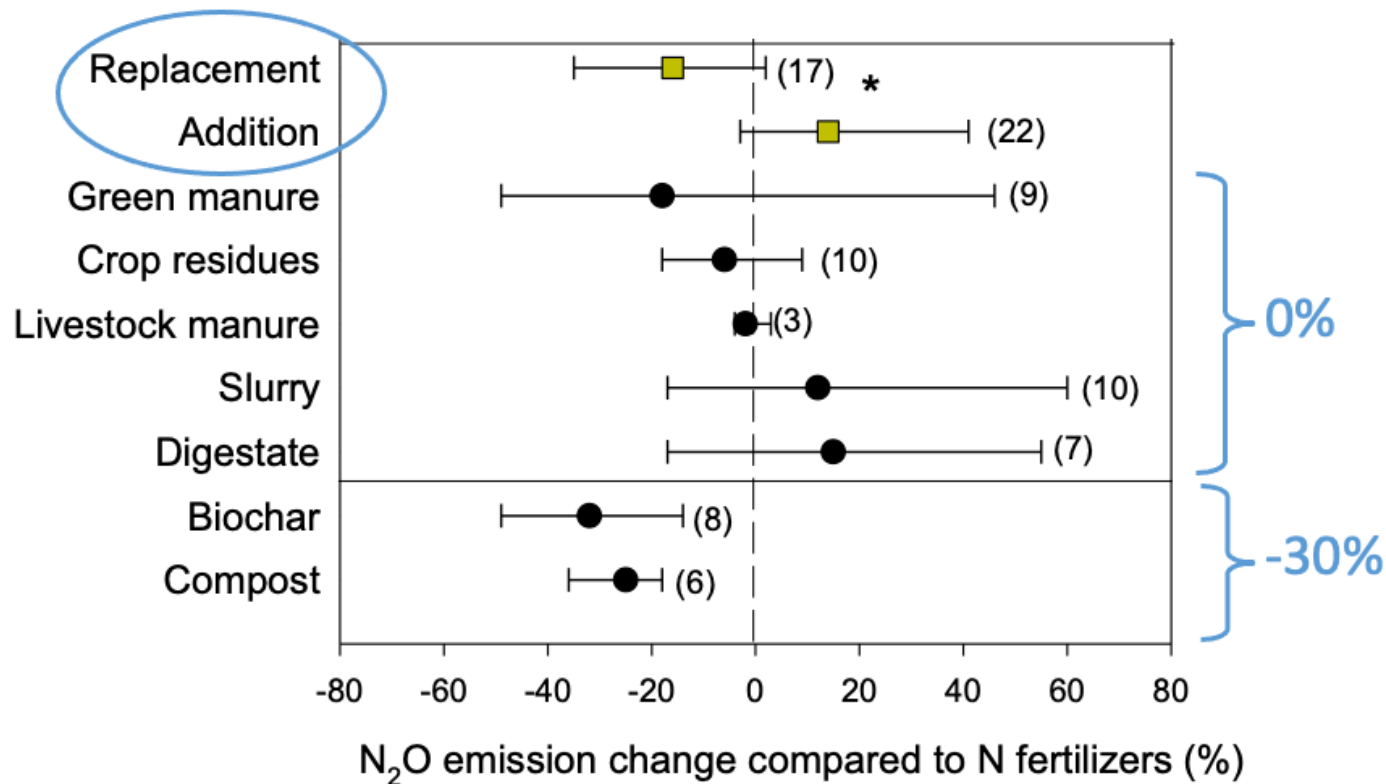
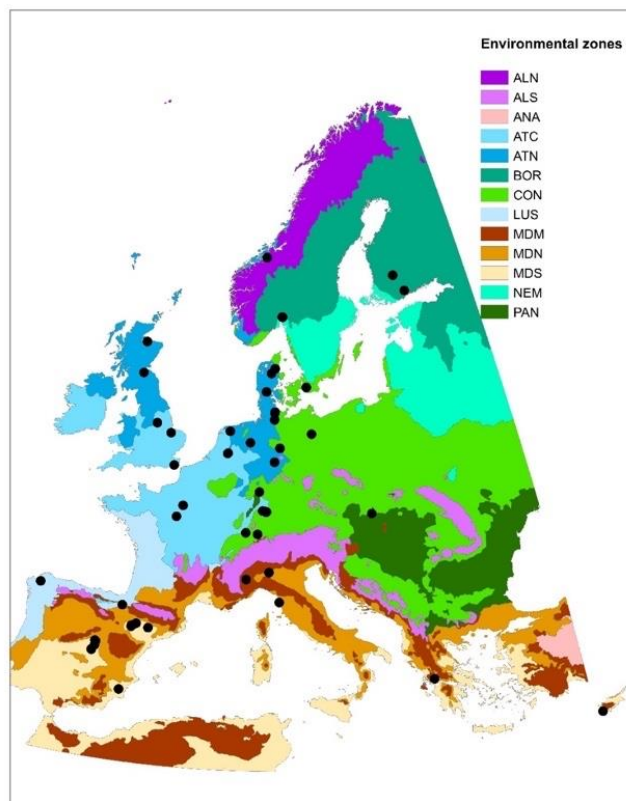
Expected outcome: C sequestration or only C loss mitigation?



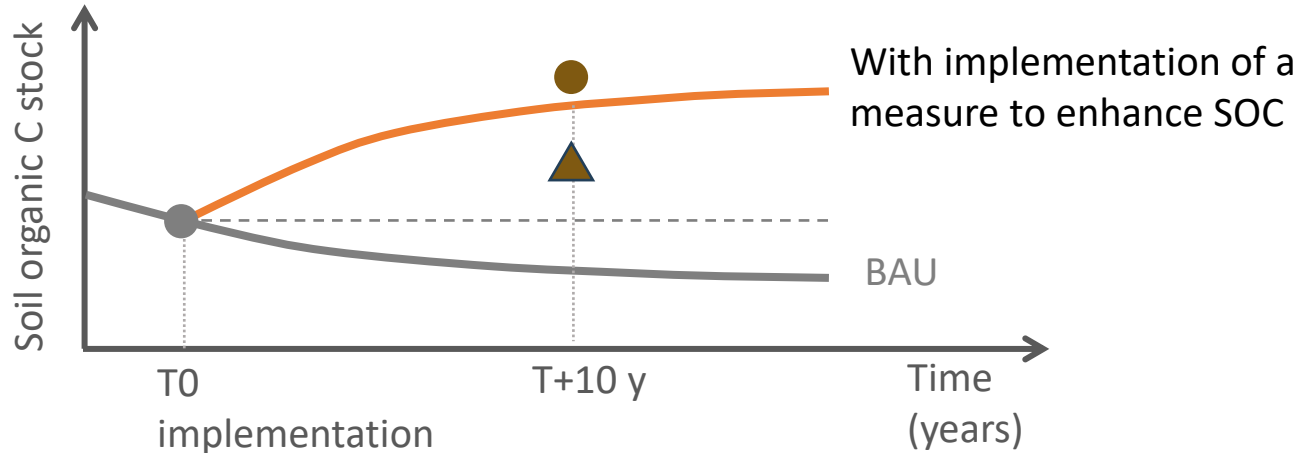
Trade-offs ?

N₂O emissions

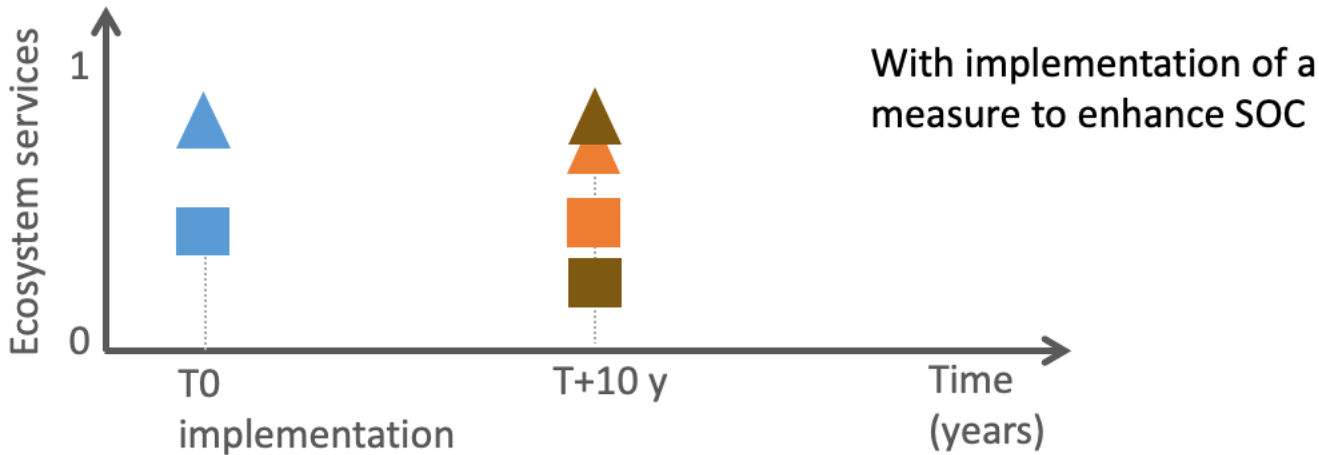
Organic amendments vs mineral fertilizers



Measuring, reporting and verifying



Modelling to predict
Measuring to verify



Conclusion: developing C farming in a soil health perspective?

Desirable, challenging, possible

The way forward : combining at best

Knowledge on the effect of (practices x pedoclimatic conditions) on SOC, GHG, ecosystem services

Modelling to predict SOC, GHG, ecosystem services

Measuring SOC, GHG, soil health indicators

