



Helping enhanced soil functions and adaptation to climate change
by sustainable conservation agriculture techniques

Stefano Brenna

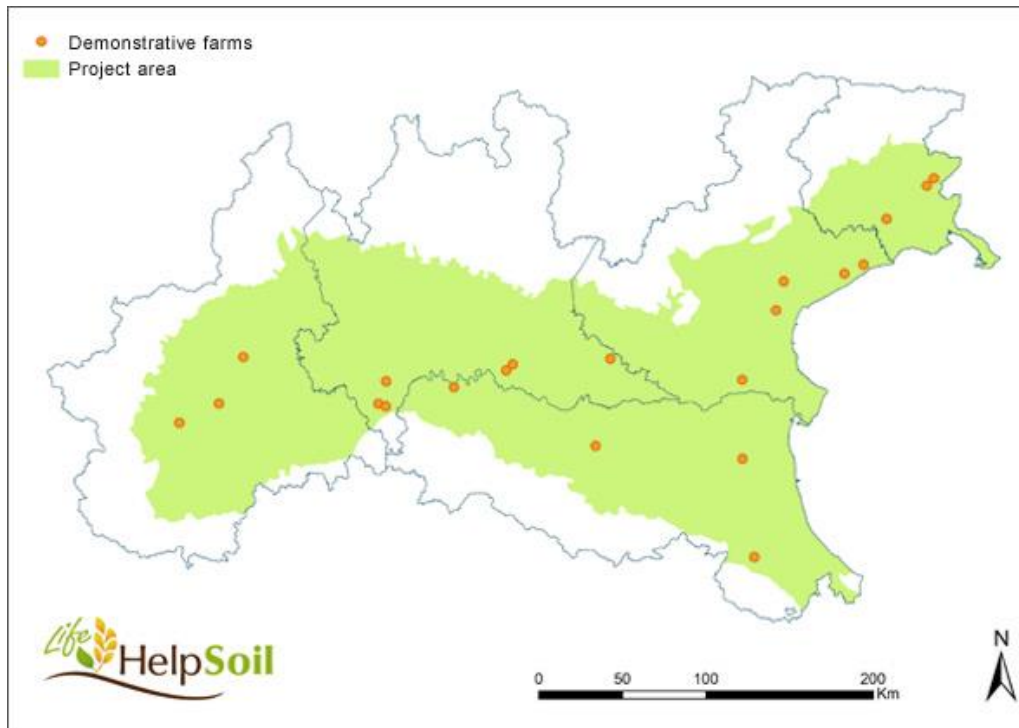
ERSAF - Regional Agency for Agriculture and Forests of Lombardy (Italy)

WORKSHOP ON “CLIMATE ACTION IN AGRICULTURE AND FORESTRY”

Brussels, 1 June 2017



Life HelpSoil - Helping soil functions and adaptation to climate change by sustainable conservation agriculture techniques



- 5 Administrative Regions involved (the whole Po plain)
- 20 demonstrative farms
- **Conservation Agriculture vs Conventional Agriculture**
- Monitoring of agronomic and environmental indicators

Life HelpSoil project area and location of demonstrative farms

coordinating beneficiary



Regione Lombardia

associate beneficiary



PARTNERS



sponsor



with the contribution
of the European Commission



Soil management practices compared

CONSERVATION AGRICULTURE (CA)

- Intensified and diversified Crop Rotations (more species, intercropping, ...)
- Permanent soil cover (crop residues management, cover crops)
- No-tillage (direct seeding, minimum tillage)



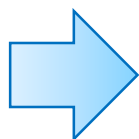
CONVENTIONAL AGRICULTURE (CV)

- Poor Crop Rotations (2-3 crops)
- No management of crop residues, no use of cover crops and intercropping
- Plough + secondary tillage to prepare seed bed



With Conservation Agriculture (CA)...

- **SOC sequestration rate till to 0.4 t/ha/year (NO TILL + COVER CROPS)**
SOC decrease under CV practices
[ARMOSA model, University of Milan - ERSAF]
- **Higher SOC content**
- **Lower Carbon footprint (LCA methodology)**
- **Fossil fuel consumption reduced by 41 % on average**

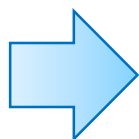


TOWARDS A NET ZERO-NEGATIVE EMISSIONS AGRICULTURE



With Conservation Agriculture (CA)...

- **Improved soil erosion control in sloping land**
- **Reduced losses of N compounds (cover crops)**
- **Enhanced AGRO-BIODIVERSITY:**
 - **improved crop rotations (more species cultivated)**
 - **land cover with living plants up to 90 % over the year**
 - **increased abundance of earthworms and microarthropods (QBS/ar index)**
- **Higher efficiency in the use of water and technical inputs**



MORE SUSTAINABLE AND RESILIENT FARMING SYSTEMS



CONTRIBUTION OF CONSERVATION AGRICULTURE TO CLIMATE ACTION

HELPSOIL – OUTCOME AND LESSON LEARNT

- Support for FARMERS PROGRESS ON CLIMATE-SMART PRODUCTION METHODS (open issues: needs of subsidies, technical assistance, improved skills, good examples, sharing experiences)
- Support for the IMPLEMENTATION OF CLIMATE COMMITMENTS AND RURAL DEVELOPMENT PLANS (Guidelines → PSR 2014-2020)



- ENHANCING RESILIENCE TO CLIMATE CHANGE IMPACT WHILE MAINTAINING CROP YIELDS IN THE LONG TERM (produce more with less – towards a low-zero-negative carbon agriculture)
- SHIFTING FROM “AGRICULTURE BUSINESS AS USUAL” TO “AGRICULTURE SUSTAINABLE AS USUAL” (more incisive policy action)



Thanks for attention!



www.lifehelpsoil.eu

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