Compatibility of Agricultural Management Practices and Types of Farming in the EU to enhance Climate Change Mitigation and Soil Health

22-23 October 2012, Hein ten Berge

Photographs by Horst Steinmann and Luca Bechini
General project info

- **KBBE-2011-1.2-01.** Sustainable management of agricultural soils in Europe for enhancing food and feed production and contributing to climate change mitigation

- **January 1st 2012 – December 31st 2014**

- **12 partners in 8 countries**

- **Total cost 3.66 M€; EC contribution 2.96 M€**
Overall aim:

to assess and improve farm compatibility
of sustainable soil management practices
for productivity, CC-mitigation, and soil quality.
Goal variables

- Productivity
- Soil management
- Soil quality
- CC mitigation
Specific Objectives

- identify major farm types and agro-environmental zones in partner countries
- assess Current Management Practices (CMPs) per farm type (as benchmark)
- assess shortlists of Best Management Practices per farm type
- consolidate proof of benefits that BMPs can bring
- estimate economic costs of BMPs
- identify barriers that prevent adoption of BMPs, given different contexts across Europe (soils, climate, farming systems, socio-eco conditions)
Specific Objectives (contd.)

- develop a **tool for farmers** to help select the BMPs for their specific case
- test and promote **innovations** to overcome barriers
- design strategies to **promote awareness** of the benefits from BMPs
- provide **guidelines** for soil-oriented **policies** (voluntary, regulatory and financial measures), consistent and compatible with policy instruments already effective at regional, national and EU level.
Partner countries
**WP1 Coordination**

**WP3 Evaluation of management**
- management innovations
  - evaluate & benchmark management options
  - best management
  - performance & tradeoffs by Sustainability Indicators

**WP2 Farm Typology**
- standard management per FTZ
- define EU Farm Types x Agro-Eco Zones (FTZ)

**WP4 Farm compatibility**
- assess farm compatibility: barriers to adoption incl. costs
  - survey stakeholder views
- prioritize innovations (to enable)
- make farm decision grids (to facilitate)

**WP5 Compatibility with policies**
- voluntary
- regulatory
- economic
  (to promote)

**WP6 Dissemination**
- strategies and pilots  (to make aware)
Some results

- Farm types x Agro-ecological zones (FTZ units)
- Inventory of Long Term Experiments (LTEs)
- Inventory of indicators to express management effects
- Preparations farmers surveys
Farm Typology * Agro-ecological zones

**Climate zones** ENZ 1-13, e.g.
- ENZ1 Alpine North
- ENZ2 Boreal
- ENZ4 Atlantic North
- ENZ12 Mediterranean North
- ENZ13 Mediterranean South

**Slope classes**
- SL1 0°
- SL2 1°
- SL3 2 - 3°
- SL4 4 - 7°
- SL5 8 - 90°

**Texture classes**
- TXT 1-5 Coarse to Very fine
Example maps of AEZs (unfinished) for superimposing farm types

Austria: Large agri-environmental zones based on climate, slope and texture

Poland: Large agri-environmental zones based on climate, slope and texture
<table>
<thead>
<tr>
<th>Land use and specialisation</th>
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<tbody>
<tr>
<td>Arable/ cereal</td>
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<tr>
<td>Arable/ fallow</td>
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<tr>
<td>Arable/ specialised crops</td>
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<td>Arable/ others</td>
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<tr>
<td>Dairy cattle/ Permanent grass</td>
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<tr>
<td>Dairy cattle/ Temporary grass</td>
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<td>Dairy cattle/ Land independent</td>
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<td>Dairy cattle/ other</td>
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<td>Beef and mixed cattle/ Permanent grass</td>
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<td>Beef and mixed cattle/ Temporary grass</td>
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<td>Beef and mixed cattle/ Land independent</td>
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<td>Beef and mixed cattle/ land-based</td>
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<tr>
<td>Sheep and goats/ land independent</td>
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<td>Sheep and goats/land-based</td>
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<tr>
<td>Pigs/ Land independent</td>
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<td>Pigs/ land-based</td>
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<tr>
<td>Poultry and mixed pigs &amp; poultry</td>
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<tr>
<td>Mixed farms</td>
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<tr>
<td>Mixed livestock</td>
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<td>Horticulture</td>
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<td>Permanent crops</td>
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<td>AEZ (Austria)</td>
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<td><strong>ENZ5_SL5_TXT2</strong></td>
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<td>total farm area (1000 ha): 364.42</td>
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<td><strong>ENZ6_SL5_TXT2</strong></td>
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<td>total farm area (1000 ha): 248.36</td>
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Effects of management practices

- List of 26 LTE’s owned by partners
- List of 74 indicators for productivity, climate change mitigation, and soil quality (biological, chemical, physical & conservation)
- Building literature database (by region)
- Meta-data on LTE’s (own and literature)
Farmer surveys

- All partner countries
- Interviews (qualitative) farmers, advisors
- Questionnaires (quantitative)
- Aiming at 100 respondents per major farm type per country
- Assess farmer views on current and alternative management practices; attitude, perceived likelihood of outcomes (risks); control factors.
- Follow up by Focus groups
- Develop farmer decision-tool and compatibility frame
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Thank you for your attention