



SOIL THREATS IN PODLASIE, POLAND



Compaction



Soil organic matter decline



Erosion



Acidification



SOIL-IMPROVING CROPPING SYSTEMS FOR INCREASING SOIL HEALTH IN POLAND

Experiments were carried out in the study site in Szaniawy, Podlasie, to explore the impacts of the following on soil health:

1. Integrated nutrient management and cover crops (Lupines, Serradella, Phacellia)
2. Fertilisation and amendments (liming, manure)

The SICs above present important practices that might benefit soil health if widely taken up. The main aim of this study was to formulate policy alternatives and actions and to facilitate the adoption of SICs.

THE STUDY SITE: SZANIAWY, POLAND

Climate: Continental, average air temperature = 7.3°C

Soil types: Sandy and loamy

Main soil threats: Highly acidic soils, low soil organic matter levels, water deficits during growing season, inadequate use of legumes for increasing Nitrogen fixation thus reducing fertiliser requirements

Current practices: Conventional farming, tillage, some crop rotations, mineral fertiliser and manure applications, rain-fed crops. Crop protection includes trapping, weeding and selective spraying of pesticides.

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INTEGRATED NUTRIENT MANAGEMENT AND COVER CROPS EXPERIMENT

Barriers preventing the adoption of cover crops, liming, and manure:

- Limited policy coherence
- Unfavourable environmental conditions
- The use of harvest residues for biogas production competing for the use in agriculture
- Low level of knowledge surrounding SICs amongst farmers
- Weak cooperation between advisory services and universities when promoting SICs adoption
- High price for conservation tillage adoption
- Limited access to organic fertilisers due to the separation of arable and livestock farming

INVESTIGATING THE EFFICACY OF POLICIES RELATING TO SOIL IMPROVING CROPPING SYSTEMS

A desk study, interviews, and workshops were carried out in Poland (Szaniawy, Podlasie) with national and regional policymakers and stakeholders. The purpose of these methods were to:

1. **Formulate policy alternatives and actions at the EU and study site level to facilitate the adoption of soil-improving cropping systems (SICs).**
2. **Assess the extent to which existing policies, instruments and practices promote the adoption of SICs**
3. **Identify contextual factors including institutional settings which influence farmer adoption of policies**
4. **Identify existing policies, alternatives, and actions which may promote SICs uptake**
5. **To assess the performance of policy alternatives.**



POLICY SHORTCOMINGS AND OPPORTUNITIES FOR FACILITATING THE UPTAKE OF SICS

The table below indicates that SICs adoption is already promoted through a range of existing regulatory, economic, and voluntary policy instruments and measures in Poland. The analysis shows that several policies address the SICs that were tested in the study site: the incorporation of cover crops into arable rotations is incentivised under the CAP's cross-compliance standards and the CAP greening payments. Integrated nutrient management is also supported under several policy instruments, including CAP greening payments, the Act on Organic Agriculture, and the Fertiliser Act to name a few.

Red circles = SICs uptake promoted through existing mandatory, economic, or voluntary policy instruments in Podlasie, Poland.

Blue circles = SICs tested elsewhere within the SoilCare project

	CROP ROTATION	GREEN MANURES, COVER CROPS, CATCH CROPS	INTEGRATED NUTRIENT MANAGEMENT	EFFICIENT IRRIGATION	CONTROLLED DRAINAGE	REDUCED/NO TILLAGE	INTEGRATED PEST MANAGEMENT	SMART WEED CONTROL	SMART RESIDUE MANAGEMENT	CONTROLLED TRAFFICKING	INTEGRATED LANDSCAPE MANAGEMENT
CAP GAEC Cross-compliance Standards	●	●				●					●
CAP Greening Payment Requirements	●	●	●			●					●
CAP Rural Development Programme 2014-2020	●	●				●					
Code of Good Agricultural Practice	●		●			●	●				
Act on Organic Agriculture	●		●			●					●
Environmental Protection Act			●				●				
Act on Water			●				●				
Waste Act			●				●				
Plant Protection Products Act							●	●			
Fertilisers Act			●								
Nature Conservation Act			●				●				



Based on the results of this study, the following actions will increase the ability of farmers to adopt SICs:

BARRIER: LIMITED POLICY COHERENCE



SOLUTION: REMOVAL OF UNDUE ADMINISTRATIVE BURDENS

Action: Improve the current policy, institutional, administrative, technical and economic set up to enable organic agriculture to develop and enable farmers to adopt new practices easily with minimal administrative burdens

BARRIER: LACK OF ECONOMIC BENEFITS/INCENTIVES AND HIGH COST OF CONSERVATION TILLAGE IMPLEMENTATION



SOLUTION: SUBSIDISE TRANSITIONS TO SICs PRACTICES

Action: Subsidise transition to practices which benefit soil health. The uptake of certain SICs, such as cover cropping, might require upfront investments, such as the purchasing of additional seeds and new machinery. Grants should be made available to farmers buying new equipment to implement these practices or groups of farmers intending to set up a 'machinery exchange'. Such an exchange could also be set up and managed by the regional/local farm advisory services or municipalities.

BARRIER: LOW KNOWLEDGE LEVELS SURROUNDING SICs



SOLUTION: MORE TRAINING AND EDUCATION

Action: Offer more awareness-raising training and educational activities to educate farmers about SICs and their benefits including to organic agriculture. Some of the practices benefitting soil will require farmers to learn about these techniques, their application to different conditions as well as their benefits to change their misconceptions about these methods. Research findings should be made accessible and widely disseminated. Knowledge should be disseminated via multiple channels, through the provision of guidance document but also farms visits and demonstration days.

BARRIER: WEAK COOPERATION BETWEEN ADVISORY SERVICES AND UNIVERSITIES



SOLUTION: STRENGTHEN COOPERATION

Action: Strengthen the cooperation between advisory services and universities to promote soil quality problems and support SICs adoption.

BARRIER: DIFFICULTIES WHEN MEETING ORGANIC PRODUCTION STANDARDS



SOLUTION: IMPROVED SET-UP IS NEEDED

Action: Improve the current policy, institutional, administrative, technical and economic set up to enable organic agriculture to develop.

