

POLICY BRIEF

HOW TO BETTER INTEGRATE SOIL MANAGEMENT PRACTICES INTO CLIMATE CHANGE ADAPTATION STRATEGIES



EJP SOIL
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INTRODUCTION

CLIMASOMA's aims include identifying and summarizing the socio-economic and political barriers and incentives for the application of soil and crop management in climate adaptation strategies.

The results presented are from a stock-take of EU policies and their instruments that impact agricultural management and barriers and drivers at the farm level in relation to improving soil health and climate change adaptation. The work includes perceptions of barriers and drivers that co-determine the willingness of farmers to act and adapt to climate change.

THE ROLE OF SOIL IN CLIMATE ADAPTATION STRATEGIES

Risk is inherent to agriculture and the increased frequency of extreme events has led to a heightened awareness of how vulnerable and sensitive to climate change the sector truly is. The agricultural sector is one of the most affected by climate change, but it is also an active driver.

The sector needs to adapt to climate change by applying local, site and sector specific strategies while reducing greenhouse gas (GHG) emissions. Soil related strategies may include, for example, soil nutrient and water management to improve soil health, through adopting more diverse crop rotations and planting stress-tolerant crop varieties. Specific soil-related adaptation strategies are often not the most prevalent measures being mentioned by farmers in the context of climate change adaptation. The key focus of many farmers is on their crops and associated yields. However, the attention for soil health as an integral part of the farm strategy has increased in recent years, indicating a growing recognition of soil and its importance for a sustainable agricultural sector.

WHAT NEEDS TO BE DONE?



Farmer engagement is crucial - connect with farmers and their motivations for adaptation



Do not avoid difficult issues related to risks such as abandonment and insurance



Use existing instruments via the CAP and the Green Deal



Design a transparent and adaptive monitoring system to support learning and accountability



Periodically reassess the goals and instruments, adjust goals and pathways, learning and accountability approaches if appropriate.

WHICH EU POLICY SUPPORTS SOIL MANAGEMENT FOR CLIMATE CHANGE ADAPTATION?

From the analyzed EU Policies, the Common Agriculture Policy (CAP) remains the most important. This is mainly because the Thematic Strategy for Soil Protection¹, launched in 2006 by the European Council for protecting soil functions, failed to show any progress. Thus, the CAP, via its objectives (post 2023), the cross-compliance system, greening requirements and rural development program is vital for soil protection policies. It provides measures that directly influence activities related to soil health and sustainable management practices.

Climate adaptation is fundamental to a thriving EU agricultural sector.

Climate adaptation is fundamental to a thriving EU agricultural sector. Climate change risks are already considered in the CAP via financial mechanisms to cope with weather and market shocks². CAP already provides handles to respond to climate change. Examples include: risk prevention and management, supporting agricultural holdings' resilience to climate change and restoring agriculture production damaged by natural disasters.

The Farm to Fork strategy, still in the design phase, is at the heart of the European Green Deal aiming to make food systems climate neutral, sustainable, fair, healthy and environmentally friendly.

When looking at soil management practices, the measures to improve soil health, soil water retention and limit soil erosion are related to the CAP's environmental schemes, natural resources, biodiversity, or organic agriculture schemes. However, to date, none of these

schemes explicitly link to climate change adaptation strategies.

In December 2019, the European Commission presented the European Green Deal, committing to climate neutrality by 2050³. The European Green Deal is a comprehensive and ambitious roadmap rolling out Europe's climate and sustainability agenda. The Green Deal covers all key sectors of the economy including agriculture. As part of the Green Deal, the biodiversity strategy⁴ and the transition to sustainable food systems (Farm to Fork strategy)⁵ have been derived.

The biodiversity strategy is to halt biodiversity loss by restoring degraded ecosystems and strengthening already protected areas. This reformed system should reduce the European climate footprint and improve public health. Key actions include reducing the use of agrochemicals and antibiotics, and the promotion of organic agriculture, strengthening already protected areas.

¹<https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2006:0231:FIN:en:PDF>

²https://ec.europa.eu/info/food-farming-fisheries/key-policies/common-agricultural-policy/cap-glance_en

³https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en

⁴https://ec.europa.eu/environment/strategy/biodiversity-strategy-2030_en

⁵https://ec.europa.eu/food/horizontal-topics/farm-fork-strategy_en

CONNECT WITH FARMERS

All strategies and policy objectives require action by farmers. So not only are the climate impacts site and sector-specific, but adaptation and mitigation strategies must also work for the individual farmer.

Farmers' decisions are heavily influenced by market support, financial incentives, agri-environmental policy, and environmental legislation. In agriculture, unlike many other sectors, direct government intervention remains the rule rather than the exception. Therefore, public policy is crucial to farmers' decisions, especially those that affect production and

farmers' income. It is often overlooked that farmers' beliefs and ambitions are hugely important when it comes to managing their farm and their soils leading to differences in their ability, motivation and willingness to adopt climate adaptation practices. The key foci of many farmers are their crops and associated yields. Specific soil-related adaptation strategies are often not the most prevalent. However, scientific literature shows that soil health as part of the farm strategy has increased in recent years.

Whether a factor is a driver, a barrier, or both depends on the context of the farmer and the farm. Farmers base their decisions for adaptation on both climatic and non-climatic factors. Therefore, understanding the local and regional specificities, including the social and cultural context combined with the barriers and drivers guiding farm-level decision-making, will help derive viable soil strategies. This also implies that we need to acknowledge the diversity of farmers based on their perceptions and ambitions across Europe. Through a two-way dialogue process, the appropriate supports can be identified and potentially brought about to encourage adaptations in their farm management, including soil adaptation measures.

The implementation also requires a transparent approach to monitoring and reporting, allowing for adaptive management strategies for learning and correction of implementation pathways.

Jan Verhagen
Jan.Verhagen@wur.nl

WHAT IS NEEDED?

Despite economic and regulatory incentives to transition to more sustainable soil management and climate change adaptation, many farmers across Europe have still not implemented or tried such practices or been motivated to change behavior for the long-term. What needs to be done to encourage farmers to use soil management as a climate change adaptation strategy?

Farmer engagement is crucial – connect with farmers and their motivations for adaptation: adaptation strategies need to be designed for farmers at the farm level

Connect farmers with other farmers: **social engagement** and learning can facilitate better adoption of useful strategies

Do not avoid difficult issues related to risks such as abandonment and insurance: change might force difficult decisions

Use existing instruments via the CAP and the Green Deal - **urgent start needed**, focus on action.

Design a **transparent and adaptive monitoring system** to support learning and accountability

Periodically **reassess the goals and instruments**, adjust goals and pathways, learning, and accountability approaches if appropriate.