**Annex 2. EJP SOIL call topics**

## Topic: Science policy interfaces (POL)

## POL2/ES7 - Enabling conditions for climate smart and sustainable soil policy: fair and functional incentives for ecosystem services related to climate mitigation and sustainable production

**Rationale/Specific challenge:** Soil is part of the natural environment in the same way as air and water, however, there is no direct policy at the EU level dedicated to soil protection or enhancing the capacity of soil to provide different functions (primary productivity, nutrient cycling, water purification and regulation, climate regulation with C sequestration and habitat for biodiversity and biological processes). Across the EU, and more globally, there is increasing awareness of climate change and biodiversity losses, their linkages and impacts amongst society. Growing concerns about soil health, carbon sequestration and climate mitigation are compelling governments to develop policies to protect their citizens' health and livelihoods, their natural environment and resources. Healthy soils, in direct line with human health and ecosystem health, are and become a more and more important topic for policy makers. The Mission Board on Soil Health and Food has proposed an ambitious target that 75% of European soils should be healthy by 2030 (Veerman et al. 2020)[1].
To enable the creation and updating of soil related policies, a number of conditions are currently prohibiting the payment schemes for ecosystem services provided by soils, that would help to give soil a higher value in policy and public perception. Farmers, especially from low-income categories should be encouraged with such payments, in particular through carbon farming schemes. A challenge is to account for the large diversity of farms between and within EU countries. Research is needed to support policy stakeholders to visualize the different challenges for climate-smart and sustainable soil management across different spatial scales, farming systems and environmental zones, to identify the best policies and their fair and effective implementation to support such payments.

To overcome the current soil policy fragmentation and improve policy cohesiveness in relation to climate, soil protection and health and to enable policy stakeholders to develop, implement and monitor future agricultural soil policies, there is the need to (i) identify synergies and trade-offs between existing policies across different scales to enable strategic policy decision making and support the selection of integrated and cross cutting specific policies for soil protection measures and management practices; (ii) to support scientific knowledge sharing with policy stakeholders and develop new frameworks for future soil policy and eco-scheme development and for carbon accounting initiatives; possibly looking the other way: punish polluters/emitters instead of rewarding clean production; (iii) to provide suitable tools and indicators/guideline values to enable better policy implementation and monitoring at multiple scales. While rewarding organic carbon sequestration in soils receives much attention (e.g., on-going

[1] Veerman, C., Correia, T.P., Bastioli, C., Biro, B., Bouma, J., Cienciala, E., Emmett, B., Frison, E.A., Grand, A., Filchew, L.H., Kriaučiūnienė, Z., Pogrzeba, M., Soussana, J.-F., Olmo, C.V., Wittkowski., R., 2020. Caring for soil is caring for life – Ensure 75% of soils are healthy by 2030 for food, people, nature and climate. Report of the Mission Board for Soil health and food. ISBN 978-92-76-21602-5 European Commission Directorate-General for Research and Innovation and Directorate-General for Agriculture and Rural Development Directorate B — Quality, Research & Innovation, Outreach Unit B2 —Research and Innovation, Brussels.

Carbon Farming study led by DG CLIMA16 and recent LIFE 2020 call on enabling carbon farming[2], solutions for promoting the delivery of ecosystem services by soils are less studied.

**Scope:** This research should analyze the proposed/perceived solutions (financial and market-based incentives, voluntary and mandatory initiatives) to address the identified socio-economic barriers and levers for increasing carbon sequestration and promoting soil health in agricultural soils, i.e., promoting the delivery of ecosystem services by soils. It should go beyond analyzing subsidy-based policies for adapting agricultural practices and systems (e.g., Common Agricultural Policy farm-level payments), to consider rewarding systems based on market solutions and/or sector-specific innovative contract schemes between farmers and agri-food industry and retailers. Such initiatives are best seen as complementary to policy instruments, or substitute if deemed more cost-effective.

Regarding rewarding farmers for SOC storage, the project should consider the following elements for a carbon farming scheme: (i) on-farm C balance and forward-looking calculations of C sequestration over 10-20 years (lifetime of the agreement), based on choices of changing practices and farming systems, (ii) an analysis of risks, responsibilities, and solutions to meet a target and deliver C sequestration and (iii) a payment scheme that covers benefits and returns to farmers in terms of risks and insurance, and defines responsibilities in the event of non-delivery or interruption of agreed services and performance. The study should analyze how rewarding schemes, in particular results based ones, taking explicitly into account soil properties, interactions between soils and agricultural practices, may be developed for ecosystem services delivered by agricultural soils, including C sequestration. As mentioned above, besides farm-level payments envisioned in the future CAP (Euro Schemes), the project should consider complementary actions to reward farmers, moving away from subsidy-based policies and bringing in more cost-effective market solutions.

This will require to consider different issues regarding: availability of soil properties, their spatial resolution and uncertainties, criteria for indicators selection, baseline, additionality, reversibility and long-term trends, control and verification of results, training and expertise required, accounting of previous work of pioneers, the design of the reward, cost-effectiveness of the payment scheme, agricultural product labelling, social perception from soil up to agri-food chain. These activities will be done in a multi-actor approach, involving stakeholders from all areas of Europe and associating different disciplines (soil scientists, economists and social scientists).

**Outputs:** An analysis of the strengths and weaknesses of a result-based payment approach for soils and proposals for appropriate payment schemes. Fair and transparent “strengths and weaknesses” analysis of expected impacts of subsidy systems and other rewarding schemes, including opinions of diversified stakeholders with an objective of equity. Criteria for indicators selection. Analysis of a result-based payment approach or polluter/emitter pays schemes.

**Expected outcomes:**

- Development of carbon farming schemes and payment schemes for ecosystem services, adapted to regional conditions.

[2] https://ec.europa.eu/easme/en/section/life/2020-call-proposals-preparatory-projects-second-round

**Expected impact:**

- EJP SOIL EI5: Fostering the uptake of soil management practices which are conducive to climate change adaptation and mitigation.

**Project Type:** Medium size research project (up to 2M€)