D4.1 Policy Briefs – Bench 1

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Summary

This deliverable presents the first two SoilValues policy briefs which aim at providing recommendations on public and private incentives for soil health at both the EU and national levels. The first brief, titled “Towards inclusive business models for soil health: six perspectives of value”, frames soil health as foundational to Europe’s food security, climate resilience, biodiversity, and cultural heritage, while acknowledging that fragmented definitions and competing priorities hinder progress. Drawing on the Total Economic Value (TEV) framework, six complementary perspectives are identified, each with unique motivations, beneficiaries, and policy implications. The brief emphasizes that no single approach can capture the full value of soils, and instead a multi-perspective policy mix is required to align incentives, avoid market distortion, and support fair, long-term soil stewardship.

Building on these perspectives, the second brief titled “Mixing practice and outcome-based targets in policy incentives for soil health” explores how blended finance mechanisms can support the transition towards regenerative agriculture. The brief highlights findings from 15 expert interviews showing that effective incentives must combine practice-based and outcome-based approaches. While practice-oriented schemes are easier to implement but may lack environmental evidence, outcome-based schemes carry higher risks and costs. The brief argues that a balanced mix ensures farmers are both supported in adopting sustainable practices and rewarded for generating positive externalities, while limiting financial exposure to uncertain soil outcomes. This blended approach is positioned as key to mitigating climate and soil degradation risks while safeguarding the long-term viability of European agriculture.

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Acronyms and abbreviations

CoP	Community of practice
EC	European Commission
EU	European Union
SES	Soil-based ecosystem services
MRV	Monitoring, reporting and verification
WP	Work package

Project Consortium

No.	Participant organisation name	Country
1	Katholieke Universiteit Leuven (KU Leuven)	BE
2	Eigen Vermogen van het Instituut voor Landbouw- en Visserijonderzoek (EV ILVO)	BE
3	Stichting Wageningen Research (WR)	NL
4	Wageningen University (WU)	NL
5	European Landowners' Organization (ELO)	BE
6	Consultoria Agroindustrial (CONSULAI)	PT
7	Aarhus Universitet (AU)	DK
8	KOIS Invest (KOIS)	BE
9	MR F&A Consult (MFRA)	BE
10	Instytut Rozwoju Wsi i Rolnictwa Poska Akademia Nauk (IrWiR PAN)	PL
11	Thuenen Institut (THUENEN)	DE
12	Udruzenje Eko-Inovacija na Balkanu (ABE)	RS
13	Institute Navarro de Technologias e Infraestructuras Agroalimentarias (INTIA)	ES
14	Lietuvos Misko ir Zemes Savininku Asociacija (FOAL)	LT

Overview of the SoilValues Project

SoilValues: Enhancing Soil health through Values-based business models (HORIZON-MISS-2021-SOIL02-05)

Project duration: 1 January 2023 – 31 December 2026 (48 months)

Total project budget: € 4 999 922.50

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Land managers combine man-made resources with natural resources to produce marketable products like food, feed, fiber and wood, but at the same time produce ecosystem services that are generally not marketed or compensated. However, land managers generally have little incentive to invest in healthy soils, as they cannot sufficiently capture the value generated by these ecosystem services. SoilValues aims to contribute to the conditions for developing successful soil health business models. These are models in which land managers make production decisions that result in higher levels of soil-based ecosystem services (SES) and in which they are paid for the non-marketed services they generate. In order for such business models to function, three important conditions need to be fulfilled: (1) the outcomes of SES need to be measured, thus requiring knowledge, indicators and models, (2) the data and information generated by these indicators and models need to be exchanged to facilitate monitoring, reporting and verification (MRV), and (3) all these activities should be governed by an appropriate institutional framework consisting of the necessary legislation, standards and incentive schemes. To enhance the conditions for developing successful soil health business models, SoilValues will: (1) provide a comprehensive assessment framework addressing all factors influencing the development of business models for investing in soil health, (2) establish 6 testing grounds across Europe to test and improve emerging and designing new soil health business models, (3) establish 12 communities of practice of land managers, value chain actors, investors and public authorities for soil health business models, (4) design a comprehensive toolbox of incentives and policy recommendations to facilitate soil health business models and (5) raise awareness and exchange knowledge for soil health business models. This work is structured along five distinct work packages (WPs) as indicated in Figure 1.

1. Introduction

This deliverable contains the first bench of policy briefs produced by the SoilValues project. With the aim of providing policy recommendations at the EU and national levels detailing public and private incentives, two concrete policy briefs are put forward.

The first brief, titled "Towards inclusive business models for soil health: six perspectives of value" presents an overview of six distinct values generated by healthy soils which can be operationalized through soil health business models. This brief is based on a theoretical foundation underpinning the SoilValues project, prompted by a need expressed by the consortium during the third annual consortium meeting to define 'value' when talking about soil health and business models[1]. As is central to the SoilValues project, the brief departs from the idea that healthy soils underpin Europe's food security, climate resilience, biodiversity, and cultural heritage. Yet, despite policy momentum such as the EU Mission *A Soil Deal for Europe*, progress towards sustainable soil stewardship is slowed by fragmented definitions and competing priorities. Building on the Total Economic Value framework, six complementary perspectives capture the diverse ways soil health generates value: 1) productivist, 2) ecosystem services, 3) resilience, 4) non-use, 5) intrinsic, and 6) social. Each perspective has distinct motivations, beneficiaries, and policy needs, from market-based payments to legal protections and community empowerment. No single approach can address all perspectives effectively. A multiperspective policy mix is needed to align incentives, avoid over- or under-subsidisation, and ensure fair, long-term stewardship of Europe's soils.

Departing from these six perspectives, the second brief, titled "Mixing practice and outcome-based targets in policy incentives for soil-health" presents an overview of potential incentives for soil health-improving land management practices and how these can be combine under a blended finance approach, with a focus on regenerative agriculture. Based on the results from Task 4.1 (Review the menu of public and private incentives), the underlying work that informs this policy brief is summarized in more detail in the first SoilValues Discussion Paper (Vanzini et al., 2024)[2]. The brief posts that to mitigate the environmental risks caused by climate change and soil degradation, and ensure the long-term viability of European agriculture, improving subsidies and other policy incentives that support farmers transition towards more sustainable practices is imperative. The evidence gathered from 15 interviews with policy experts shows that to be effective, i.e., adopted and with positive impact on soil and farmers' economics, incentives should incorporate a mix of practice and outcome-based targets. In fact, while practice-based incentives may lack evidence of their environmental impact, shifting solely to outcome-based incentives poses challenges due to associated unpredictability and implementation costs. Hence, balancing practice-based and outcomes-based approaches ensures farmers are rewarded for the positive externalities they generate while managing financial exposure to soil outcomes and associated risks.

Key policy recommendations are summarized in the main body of this deliverable, but the complete policy briefs can be found in appendix. Future policy briefs will provide more detailed insights on soil health business models and how to finance them.

[1] This framework has been presented at multiple occasions, including the European Economic and Social Committee event on Regenerative Agriculture 2025 (https://www.eesc.europa.eu/en/agenda/our-events/events/regenerative-agriculture) and at the 5th EUSO Stakeholders forum (https://esdac.jrc.ec.europa.eu/euso/5th-euso-stakeholders-forum). At the time of writing, a Forum Paper format article in which this framework is described in greater detail is under review at the Copernicus SOIL journal.

[2] This work has been presented at multiple occasions, including at the Policy and Economic Instruments to Improve Soil Health webinar organized on the Soil Community Platform together with the InBestSoil and NOVASOIL sister projects.

2. Policy recommendations

2.1 Brief 1: Towards inclusive business models for soil health: six perspectives on value

The aim of this policy brief was to sketch out the various perspectives and values related to soil health and that need to be taken into account when designing incentives for land managers to invest in soil health. Healthy soils generate diverse economic, ecological, and social benefits, but these values are not addressed by any single policy instrument. A one-size-fits-all approach risks inefficiency and inequity. Instead, policies should combine targeted incentives, legal protections, and institutional support tailored to the different ways soil health creates value. To operationalize this multi-perspective framework for concrete projects requires the identification of financing gaps and project-related risks on the one hand and the various possibilities for addressing these gaps and risks by combining instruments such as grants for technical assistance, concessional loans and first-loss equity with other risk management instruments, ultimately to leverage commercial loans or equity investments. The nature of gaps, risks and instruments is very context specific, with context referring to sectors and geographies, which means that such operational frameworks may be built from common principles but need to be adapted to cater for local conditions. At the same time, such frameworks should be built to be inclusive but to avoid over- or under-subsidization due to overlapping or misaligned value perspectives.

2.2 Brief 2: Mixing practice and outcome-based targets in policy incentives for soil-health

What emerged is that, rather thana lack of resources, the challenges lie in how these are directed. Repurposing existing subsidises and incentives is debated across different climate issues, including soil-health farming. Most existing incentives in this domain are practice-based, and while some are known to harm soils, others lack substantial evidence of the positive soil-health outcomes they could generate. Nevertheless, shifting from practice to outcome-based incentives is not recommended either. Given that soil outcomes are long-term, difficult to predict, costly to measure, and influenced by factors beyond farmers' control, it is better to avoid purely outcome-based incentives that place all the risks on farmers.

Instead of prescribing specific practices, incentives should offer a menu of options for farmers to choose from based on their experience and understanding of their specific context. Empowering farmers to select and implement practices best suited to their unique conditions, with access to upfront capital is crucial. On the other hand, it is important that these incentives do not create market distortions by promoting farming practices without a verifiable impact on soil health. To address this, a complementary mechanism which rewards outcomes should be established, enabling farmers to access additional revenue if they achieve pre-agreed impact targets, thereby motivating them to be impact-driven. Balancing the trade-offs between practice-based approaches, which are crucial in the initial stages, and outcomes-based methods ensures that farmers are rewarded for their results while their financial exposure to soil outcomes is controlled and associated risks partially mitigated.

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Vanzini, M., Limni, S., Pallara, F., Guarnaschelli, S., 2024. Incentivising the transition to soil-health, regenerative farming practices Leveraging Blended Finance for effective incentives design. SoilValues. https://doi.org/10.5281/zenodo.13771540

Appendix A: Policy Brief 1: Towards inclusive business models for soil health: six perspectives on value

Towards inclusive business models for soil health: six perspectives on value

Executive summary

Healthy soils underpin Europe's food security, climate resilience, biodiversity, and cultural heritage. Yet, despite policy momentum such as the EU Mission *A Soil Deal for Europe*, progress towards sustainable soil stewardship is slowed by fragmented definitions and competing priorities. Building on the Total Economic Value framework, six complementary perspectives capture the diverse ways soil health generates value: 1) productivist, 2) ecosystem services, 3) resilience, 4) non-use, 5) intrinsic, and 6) social. Each perspective has distinct motivations, beneficiaries, and policy needs, from market-based payments to legal protections and community empowerment. No single approach can address all perspectives effectively. A multi-perspective policy mix is needed to align incentives, avoid over- or under-subsidisation, and ensure fair, long-term stewardship of Europe's soils.

Healthy soils are essential for Europe's food security, climate resilience, biodiversity and cultural heritage and thus benefit all of society. However, potential benefits are distributed among many actors while the land managers who need to invest in soil health face most of the costs and risks. In addition, the availability of public funds like the Common Agricultural Policy, is limited, so that private capital is needed to make investment happen.

Hence, a coordinated policy effort is required to combine these different interests into value propositions that satisfy the needs of and generate value for all actors involved. To develop an operational framework that combines all these elements, requires first a better understanding of the types of values that are generated, which is the main aim of this policy brief.

To achieve this, we draw on the Total Economic Value framework, a tool for categorising the multiple ways nature generates value. By contextualizing the TEV framework for **soil health-based business models (SHBMs)**, we identify six interlinked perspectives driving investment in soil health.

1. **Productivist** – soil as productive capital improving yields and reducing costs
2. **Ecosystem services** – soil as a provider of public goods (e.g., carbon sequestration, water regulation)
3. **Resilience** – soil as insurance against environmental and economic shocks
4. **Non-use value** – protecting soil for future generations and societal well-being
5. **Intrinsic value** – recognizing soil's inherent worth beyond human utility
6. **Social** – soil health as a driver of inclusive governance, equity, and innovation.

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Policy implications

No single instrument can address all perspectives effectively. A **multi-perspective policy mix** is essential to align incentives, avoid over- or under-subsidization, and ensure equitable benefits.

The diversity of perspectives on soil health means that different actors respond to different types of incentives, and policy must be tailored accordingly. From a **productivist perspective**, adoption of soil health improving practices may be constrained by delayed financial benefits, insufficient returns, or limited access to credit. In these cases, **transitional subsidies**, **permanent supplementary income** streams, or **government-backed loan guarantees** can help overcome adoption barriers.

Within the **ecosystem services perspective**, payments for ESs are a key tool but require robust measurement, verification, and market mechanisms. **Hybrid payment models**, combining practice-based incentives with performance-based rewards, can address uncertainties in delivery. It is also important to recognize that **maintaining existing ecosystem service stocks** can be as valuable as creating new ones, yet current schemes often fail to capture these ongoing costs.

The **resilience perspective** faces coordination challenges, as benefits are widely shared, but responsibilities are diffuse, leading to free-riding and underinvestment. **Risk-sharing agreements**, **coordinated funding mechanisms**, and **public co-investment** can ensure that resilience-building practices are adopted even when they do not provide immediate financial gains.

From the **non-use value** and **intrinsic value perspectives**, market-based approaches are generally insufficient. These require **legal, cultural, and educational interventions** such as integrating soil protection into environmental law, promoting public awareness, and supporting cultural practices that strengthen stewardship ethics.

Finally, the **social perspective** benefits from institutional support for **local governance platforms**, **peer-to-peer learning networks**, and **participatory research**.




Flexible funding is essential to sustain grassroots initiatives over time.

Conclusion

The aim of this policy brief was to sketch out the various perspectives and values related to soil health and that need to be taken into account when designing incentives for land managers to invest in soil health. Healthy soils generate diverse economic, ecological, and social benefits, but these values are not addressed by any single policy instrument. A one-size-fits-all approach risks inefficiency and inequity. Instead, policies should combine targeted incentives, legal protections, and institutional support tailored to the different ways soil health creates value.

To operationalize this multi-perspective framework for concrete projects requires the identification of financing gaps and

project-related risks on the one hand and the various possibilities for addressing these gaps and risks by combining instruments such as grants for technical assistance, concessional loans and first-loss equity with other risk management instruments, ultimately to leverage commercial loans or equity investments.

The nature of gaps, risks and instruments is very context specific, with context referring to sectors and geographies, which means that such operational frameworks may be built from common principles but need to be adapted to cater for local conditions.

At the same time, such frameworks should be built to be inclusive but to avoid over- or under-subsidization due to overlapping or misaligned value perspectives.

Coordination across sectors is essential to prevent free-riding, ensure fair benefit distribution, and balance short-term returns with long-term resilience. By embracing this multi-perspective approach, policy can foster business models that mobilize diverse stakeholders, scale sustainable practices, and secure Europe's soils for future generations.

Key take-aways

Soil health policy must match diverse value systems. Economic, ecological, and social perspectives require different instruments and timelines, making a multi-perspective approach essential.

Long term resilience depends on coordinated action. Cross-sector partnerships, fair benefit-sharing, and adaptive governance are critical to ensure that soil health gains are sustained over decades.

Incentives for land managers	Provide transitional subsidies for early adoption of soil health practices, permanent supplementary income streams where returns are insufficient, and government-based loan guarantees to ease access to finance.
Ecosystem service markets	Standardise measurement and certification for soil-based ESs (e.g., carbon, biodiversity, water) and promote hybrid schemes rewarding both practices and verified outcomes. Include compensation for maintaining existing ES stocks.
Resilience investment	Establish coordinated risk-sharing mechanisms involving supply chain actors, insurers, and public agencies, and co-invest in resilience-building practices and infrastructure.
Legal & cultural protection	Integrate soil protection into environmental law, explore rights-of-nature approaches, and invest in educational and cultural programs that build stewardship ethics.
Community empowerment	Provide flexible funding for community-led soil health initiatives, create platforms for peer learning and participatory research, and ensure genuine local leadership is protected from tokenism.

Appendix B: Policy Brief 2: Mixing practice and outcome-based targets in policy incentives for soil-health

SoilValues

SOILVALUES POLICY BRIEF N°2

August 2025

Mixing practice and outcome-based targets in policy incentives for soil-health

Executive summary

To mitigate the environmental risks caused by climate change and soil degradation, and ensure the long-term viability of European agriculture, improving subsidies and other policy incentives that support farmers' transition towards more sustainable practices is imperative. The evidence gathered from 15 interviews with policy experts shows that to be effective, i.e., adopted and with positive impact on soil and farmers' economics, incentives should incorporate a mix of practice and outcome-based targets. In fact, while practice-based incentives may lack evidence of their environmental impact, shifting solely to outcome-based incentives poses challenges due to associated unpredictability and implementation costs. Hence, balancing practice-based and outcomes-based approaches ensures farmers are rewarded for the positive externalities they generate while managing financial exposure to soil outcomes and associated risks.

Accelerated by climate change, land and soil degradation threatens the viability and sustainability of European agriculture, costing an estimated €50 billion per year. Farming practices are linked to approximately 11% of EU's total greenhouse gas emissions, and over 60% of EU soils are considered unhealthy due to unsustainable land management practices.

Transitioning towards a sustainable, climate neutral agriculture is essential for mitigating these environmental risks and ensuring the long-term viability of the sector. Whilst this calls for a decisive shift in policy toward practices that restore and sustain healthy soils, the EU has already laid out an ambitious framework anchored in the European Green Deal to guide both public and private stakeholders in their actions.

Policy incentives for soil health farming

The European Climate Law and the "Fit for 55" package sets the overall framework for achieving EU-wide climate neutrality by 2050. Within this context, the final amended Land Use, Land Use Change and Forestry (LULUCF) Regulation (Regulation (EU) 2023/839, amending Regulation (EU) 2018/841) establishes strengthened targets for carbon removals by 2030, but does not include the sectoral climate-neutrality target for Agriculture, Forestry and Other Land Uses (AFOLU) by 2035 that had been part of the initial proposal. The EU Soil Strategy for 2030 outlines initiatives such as the establishment of a network of excellence of practitioners including on regenerative and organic agriculture and the promotion of investments targeting soil health within the EU Taxonomy. Additionally, the EU Biodiversity Strategy for 2030, coupled with the adopted Nature Restoration Law (Regulation (EU)

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2024/1644), reinforces the importance of biodiversity conservation and restoration efforts to which the EU has committed to dedicate 7,5% from 2024, and 10 % from 2026 of annual spending under the 2021-27 Multiannual Financial Framework.

The Common Agricultural Policy (CAP) is the cornerstone of European agricultural policy, shaping the future direction of the sector. The current CAP (2023-2027), implemented at the Member State level through national CAP Strategic Plans, has strengthened the environmental requirements of the Good Agricultural and Environmental Conditions (GAEC). It has also introduced Eco-Schemes under pillar I (income support) to incentivize practices that promote, among other benefits, soil health.

On CO_2 sequestration, the EU has adopted the Carbon Removal Certification Framework (CRCF), which establishes certification rules and QU.A.L.ITY criteria to facilitate the development of the carbon market and the scaling of carbon farming practices.

Through 15 semi-structure interviews conducted with policy professionals at the European and national level in the six SoilValues testing ground countries (Belgium, Denmark, Germany, the Netherlands, Poland, and Portugal), we assessed the effectiveness of policy incentives based on a framework including adoption, impact on soil, and economic contribution to farmers. While most (11) interviews revolved around the CAP, our findings have wider implications, leveraging inputs from other agri-food value chain stakeholders.

Conclusion

Interviews indicated that rather than a lack of resources, the challenges lie in how resources are directed. Repurposing existing subsidizes and incentives was debated across different climate issues, including soil health farming. Most existing incentives in this domain are practice-based, and while certain practices are detrimental to soil health, others still lack robust evidence of delivering positive soil-health outcomes.

For example, intensive monocropping and excessive tillage are widely recognized as harmful to soil health, accelerating erosion and reducing organic matter. By contrast, cover cropping or reduced pesticide use are often incentivized as positive practices, but evidence on their long-term soil-health outcomes can vary by region and implementation.

Nevertheless, shifting from practice to outcome-based incentives is not recommended either. Given that soil outcomes are long-term, difficult to predict, costly to measure, and influenced by factors beyond farmers' control, it is better to avoid purely outcome-based incentives that place all the risks on farmers.

Key recommendations

Instead of prescribing specific practices, incentives should offer a menu of options for farmers to choose from based on their experience and specific context. Empowering farmers to select and implement practices best suited to their unique conditions, with access to upfront capital, is crucial. On the other hand, it is important that these incentives do not create market distortions by promoting farming practices without verifiable impacts on soil health.

A complementary mechanism which rewards outcomes should be established, enabling farmers to access additional revenue if they achieve pre-agreed targets, thus motivating them to be impact-driven.

Balancing the trade-offs between practice-based, which are crucial in the initial stages, and outcomes-based methods ensures that farmers are rewarded for their results while their financial exposure to soil outcomes is controlled and risks partially mitigated.

"I think it should be a mix. We cannot say incentives must be fully outcome-based because it may not reflect the efforts. There are situations where you need to wait years before you start to get some tangible benefits and that's a pity if a farmer who needs a bit of support needs to wait so long before getting some help"

- Project intermediary