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Incentivising the transition to soil-health, regenerative farming practices

Leveraging Blended Finance for effective incentives design

DISCUSSION PAPER

SoilValues

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About SoilValues

SoilValues is a 4-year Horizon project with a consortium of 14 partners aiming to improve soil health through value-based business models. Healthy soils are an important asset for agriculture and food production, but also for society as a whole. Soil plays an important role in generating ecosystem services, such as regulating freshwater supply and biodiversity, but it is also essential for carbon sequestration. Therefore, conservation and restoration of our soils is essential for achieving climate neutrality, zero pollution, sustainable food supply and a resilient environment.

SoilValues will contribute to the development of successful soil health business models across the EU to improve soil quality and provide land managers with the necessary incentives.

- Provide an assessment framework for all factors influencing soil-health business models & incentives.
- Setting up six testing grounds across Europe to test emerging and new business models for soil health.
- Establish 12 communities of practice of land managers, value chain actors, investors and governments.
- Develop a toolbox of incentives and policy recommendations to promote soil health.
- Raise awareness and exchange knowledge on soil health business models.

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Executive Summary

Agriculture has a reciprocal relationship with climate change: it is one of the major contributors while also bearing the brunt of its consequences. Intensive farming practices have degraded soil quality, increasingly undermining food production and the supply of essential ecosystem services. This issue is particularly evident in Europe, where over 60% of soils are considered unhealthy.[1] It is therefore imperative to transform farming systems to preserve and regenerate soil health. While farmers are at the forefront of this transition, they currently lack the necessary support and incentives to enact this change and adopt soil-health business models.

Within the Horizon Europe project SoilValues, KOIS seeks to analyse how farmers can be better incentivised to improve soil quality and adopt viable soil-health business models. In this discussion paper we explore how to overcome the barriers to transitioning to soil-health practices through the lens of regenerative agriculture, a concept that increasingly resonates with a wide range of stakeholders and is inclusive of a diverse farmer community. Due to its accessibility and its focus on soil health outcomes, regenerative agriculture informs our data collection and analysis.

In this discussion paper we assessed existing incentives available in Europe and in SoilValues' six testing ground countries: Belgium, Denmark, Germany, the Netherlands, Poland, and Portugal. We reviewed the offering of various stakeholders including policy makers, corporates, financial and project intermediaries. Our research employed mixed methods, incorporating secondary and primary data. Secondary data was gathered through literature review and desk research, while primary data was collected via 54 semi-structured interviews with stakeholders offering one or more incentives to farmers.

To assess the effectiveness of these incentives, we developed an assessment framework based on adoption, soil health contribution and economic impact for the farmers.[2, 3]

While we found that that no single incentive can drive this transition, the research findings inform our recommendations on how to effectively incentivise the transition to regenerative agriculture. Focusing on the initial one-to-three-year period, which holds the highest risk and uncertainty and thus the greatest potential for impact and additionality, our recommendations revolve around design approaches, the types of support provided, and strategies for scaling.

1. **Focusing on farmers' needs, recognising the specificities of the local context, and combining practice and outcome-based targets to design incentives that benefit both farmers and the soil.**

2. **Mixing financing, de-risking, and technical support to equip farmers with all the necessary resources to navigate the challenges of the initial stages of the transition.**

3. **Aggregating farmers and enabling multi-stake-holder collaboration for scale.**

Finally, drawing on KOIS' expertise and track record, we link our recommendations with blended finance – a strategic approach that uses public and philanthropic capital to catalyse additional private resources towards desired impact targets. In this light, we showcase examples of best practices from markets outside the European Union that implement our recommendations. Overall, with this discussion paper we aim to illustrate that addressing soil health requires complex, yet not complicated, solutions that can yield significant financial and impact returns.

Challenge & Opportunity

Why focus on soil health and agriculture?

Agriculture has a reciprocal relationship with the ongoing climate and ecological crisis, as a significant contributor to global greenhouse gas emissions and soil degradation, while being vulnerable to the adverse effects of these processes. After World War II, driven by the need to feed a growing population, the agricultural sector has intensified production, exerting pressure on farmers to deliver large quantities of food at minimal costs. Greater efficiency and large-scale output have been achieved through the widespread use of chemical inputs and intensive practices that have come at a substantial environmental cost. Excessive use of chemical fertilizers, pesticides, and poor soil management affect soil biodiversity and increase leaching due to soil acidification and salinization. The use of heavy machinery, intensive tillage, and deep ploughing cause a decline in soil structure and organic matter that affects water quality and the ecological capacity of the soil to retain and supply water.[4]

Accelerated by climate change, land and soil degradation threatens the viability and sustainability of European agriculture. Despite occupying only 2.8% of the global land area, the European Union accounts for about 12% of global agricultural production[5] and the sector contributed to 1.3% of the region's GDP in 2020.[6] Linked to the loss of ecosystem services otherwise provided by healthy soils, it is estimated that soil degradation in the EU comes at cost of €50 billion per year.[7] Farming practices are linked to approximately 11% of Europe's total greenhouse gas emissions,[8] and over 60% of EU soils are considered unhealthy due to unsustainable land management, sealing, contamination, overexploitation, and the impacts of climate change.[9] The extensive degradation of soils in the EU is evidenced by contaminated sites, organic matter and soil carbon loss, lands at risk of desertification, and unsustainable erosion rates that threaten future food and raw material availability.[10,11]

To mitigate the increasing environmental risks and strike a better balance between agricultural productivity and sustainability, it is imperative to shift towards farming practices that nurture and maintain healthy soils. Beyond their critical role in food production, soils contribute significantly to broader societal well-being by offering ecosystem services such as freshwater regulation, biodiversity habitat provision, and carbon sequestration, all vital for climate neutrality and resilience.[12] Halting environmental degradation and restoring soil health will require a paradigm shift and concerted actions from a wide range of public and private stakeholders.[13] Farmers are on the frontline, but currently have little incentive to invest in healthy soils, given their margins have been squeezed and they are unable to capture the value those ecosystem services provide. SoilValues seeks to address this imbalance by exploring incentive mechanisms that effectively support soil-health farming practices and business models. The focus is on incentives available from both the public and private sectors to farmers in six European countries: Belgium, Denmark, Germany, Poland, Portugal, and The Netherlands, selected to ensure diversity in soil types, pedoclimatic conditions, socio-economic and environmental contexts.

The first part of the discussion paper delves into the problem statement, providing an overview of the interconnections between climate change, soil degradation and intensive farming system.

It begins by justifying the focus on regenerative agriculture when addressing soil health through exploring its definitions and unique features compared to other sustainable soil management practices. This section then outlines the barriers farmers face in implementing soil-health, regenerative farming practices, detailing possible steps of the transition and where incentives are most needed.

The second part of the discussion paper examines the landscape of current incentives in Europe that support farmers transitioning. It first provides an analysis of the policy frameworks and private incentives offered by different stakeholders we have engaged in our research. This is followed by an analysis of the incentives' effectiveness based on our three-tiered assessment framework: adoption, soil-health and economic impact.

Finally, it offers recommendations on effective strategies to mobilise incentives to support farmers in adopting regenerative agricultural practices and provides best practices from other markets showcasing how these could be implemented in Europe.

Methodology

Over a ten-month period, from May 2023 to February 2024, KOIS has mapped and assessed the effectiveness of private and public incentives available to farmers in Europe, with a specific focus on SoilValues testing ground countries: Belgium, Denmark, Germany, Poland, Portugal, and The Netherlands. Our definition of incentives, as articulated by Piñeiro et al. (2020), is that they *"are instruments used by the public and private sectors to encourage farmers to protect or enhance ecosystem services [soil] bene icial to them and others, while simultaneously improving the produc-tivity and the competitiveness of the agricultural sector"*.

For data collection, a mixed-method research design was deployed using both secondary and primary data which were collected via: (i) desk research and review of publicly available resources, and (ii) in-depth semi-structued interviews with relevant stakeholders. Starting with an incentives mapping, specific incentives such as instruments and programs were identified through online research and the organisations supplying them were pinpointed. This led to a comprehensive stakeholder mapping, compiling a list of relevant organizations and categorising them based on their roles and functions. These categories included policymakers, policy experts, corporates, banking and insurance, private investors, project intermediaries, and donors. Finally, based on publicly available information on the incentives mapped, we conducted a preliminary analysis which was validated through interviews with the issuing organisations whenever possible. Interviewees were identified through KOIS network, SoilValues consortium partners, external outreach efforts – LinkedIn and networking events – or referrals from other interviewees using a snowball sampling method to increase the number of interviews.[14] Stakeholders were approached via an introduction email including the request, the project objectives, and the research bio and ethics. The interview protocol contained questions divided into three sections: presentations and description of the incentive(s) provided, assessment of effectiveness, and future developments. The protocol was adapted based on the stakeholder category, and specific questions that emerged during the desk research were introduced. The semi-structured nature of the interviews allowed participants to discuss incentives and issues they deemed most relevant.

The interviews lasted on average 50 minutes and were conducted via the online platform Teams. Three KOIS team members led the interviews, all of which were digitally recorded and transcribed. All interviewees' names were anonymized and identified throughout this discussion paper based on their stakeholder category.

To analyse the primary and secondary data collected, an assessment framework was developed that defines an incentive effective if it i) is adopted by farmers, ii) has a positive impact on soil health, and iii) has a positive impact on farmers' economic performance.[15] In terms of adoption, we consider not only direct applications and actual uptake, but also awareness and appetite among farmers.[16] For soil health, we investigate the practices that the incentives promote and, if relevant, how the impact on soil is measured and/or verified.

Regarding economic impact, without direct access to farmers, we explore with the incentive providers how the instruments could financially benefit farmers and whether this could be sufficient to enable their transition.

To generalise conclusions across types of incentives, a qualitative method based on case studies[17] was adopted in which findings have been summarized and recurrent themes highlighted.

Based on this analysis we drew recommendations on how to effectively incentivise the transition to regenerative, soil-health farming practices and identify three best practices from other markets that could potentially be replicated or inform new initiatives in Europe.

Why is regenerative agriculture relevant?

Among the various and overlapping approaches to soil conservation and sustainable soil management such as precision agriculture, organic farming, and agroecology, this discussion paper focuses on the concept of regenerative agriculture for its emphasis on desired outcomes rather than prescribed solutions, and its accessibility to a wide range of stakeholders. Regenerative agriculture stresses tangible, positive outcomes in soil regeneration, thus moving beyond the traditional 'do no harm' principle and practices primarily aimed at preservation and mitigation of negative effects. Regenerative agriculture's increasing prominence among farmers and agri-food value chain actors – many of whom are already engaged with other agricultural frameworks – underscores the synergies with other sustainable soil management approaches but also the attractiveness of its unique value proposition. For example, precision agriculture is promoted for its ability to enhance efficiency through the integration of advanced technological solutions, presenting a clear investment case. However, the substantial capital expenditures and the level of technical expertise required can be prohibitive for some farmers.[18] Organic farming has a strong market differentiator in its popularly-known certification, which simplifies decision-making for both investors and consumers. Yet, its stringent regulations and requirements may deter some farmers,[19] as evidenced by the fact that only 2.7% of all farms in the EU were fully organic in 2020,[20] and only 9.9% of agricultural land was accounted as organic in 2021.[21]

Instead of prescribing solutions and developing a rigid operating environment, regenerative agriculture allows farmers to achieve the desired soil-health outcomes in various ways. Similarly, agroecology, which is understood as a holistic approach that considers environmental, social, and political dimensions,[22] shares the regenerative objective and outcome-based approach. However, it can be perceived as overly politicised, potentially deterring engagement from some stakeholders.[23]

Regenerative agriculture on the other hand, offers a pragmatic yet flexible pathway for achieving soil health and sustainability, thereby attracting a broad and diverse spectrum of the agricultural community.

Regenerative agriculture has emerged as an accessible, though not well-established framework for improving soil health and fostering the agriculture transition. The concept of regenerative agriculture, despite its growing prominence, lacks a universally accepted definition, fuelling debates about its meaning and scope. Diverse interpretations have emerged over the years, ranging from ones that focus strictly on soil to others that more holistically consider climate, biodiversity, water management, and broader ecosystem services, including nutrient cycling, air quality, and habitat provision. Some definitions extend even further, incorporating socio-economic impacts on farmers and local communities.[24] Aligning our analysis to the European Commission's Mission Soil,[25] we consider that regenerative agriculture *"has as its core the intention to improve the health of soil"*[26] and that soil conservation serves as an entry point to contribute to more holistic ecosystem services and broader environmental, productivity, and economic benefits.[27]

Definitions of regenerative agriculture have been categorised as *process-based*, focusing on the inclusion or exclusion of one or more specific agricultural practices; *outcome-based*, emphasising its potential impacts; and *hybrid* when there is a mix of the two.[28] While other established sustainable agricultural models adhere to a stringent process-based framework, regenerative agriculture offers flexibility to farmers on how to achieve certain results. This flexible approach underpins the analysis of this discussion paper, as we value its adaptability for widespread application.

The absence of a rigid definition makes regenerative agriculture accessible to a broad range of farmers, including those engaged in conventional practices, whose participation is crucial for achieving transformative change at scale. On the other hand, this lack of specificity increases the risk of greenwashing, as claims related to regenerative practices are challenging to verify and validate. In our view, an inclusive, flexible, outcome-based definition is instrumental to unlocking the transformative potential of regenerative agriculture. At the same time, clearly establishing the perimeter of action is essential for ensuring its credibility and validity, and thus support growing interest and applications across the value chain.

Although not rigorously defined, regenerative agriculture is grounded on five key principles (Figure 1) that are becoming increasingly popular among agri-food value chain actors: minimise soil disturbance, cover the soil, maximise crop diversity, preserve living roots, and integrate animals.

The five key principles of regenerative agriculture serve not only as a theoretical framework, but also as practical guidelines for farmers contemplating the transition to regenerative practices. To translate these principles into tangible actions, researchers and practitioners have mapped regenerative farming practices and described how they contribute to the broader principles. These are not prescriptive requirements, but rather a 'menu of options' from which to select to facilitate farmers' transition. Key practices identified as foundational to regenerative agriculture include, but are not limited to, minimal or no-tillage, stubble retention, cover crops, intercropping, composting, bio-stimulants application, reduced use of agri-chemicals, diverse crop rotations, and the integration of agroforestry systems. Research has highlighted the positive impact of these practices, including improvements in soil quality, carbon sequestration, water retention, biodiversity restoration, and agricultural yields.[30,31]

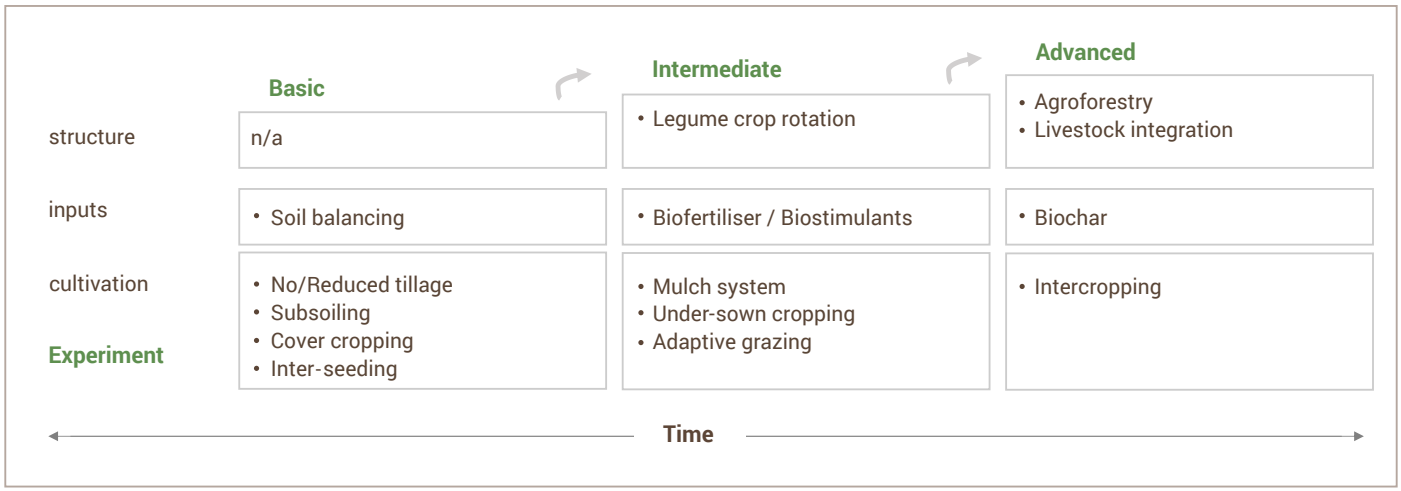
Figure 1: Five principles of regenerative agriculture[29]

However, the specific benefits are highly dependent on the specific context of the farm as well as the degree to which these practices are adopted. Indeed, regenerative agriculture is often adopted incrementally, beginning with basic, easily integrable practices, before progressing to more advanced practices that demand higher investments and years of data and experimentation for optimal implementation. Although attempts to identify basic, intermediate, and advanced transition stages have been made (Figure 2), the transition is neither uniform nor linear.

Starting points, stages, and associated practices vary significantly from one farmer to another.

This diversity illustrates the reality that transitioning to regenerative agriculture is not a swift overhaul but rather a long-term journey, often spanning several years. This phased, trial-and-error approach is needed, as it allows farmers to fill key knowledge and data gaps, test and validate practices that best suit their land and unique circumstances, and gradually build more sustainable and resilient agricultural systems.

Figure 2: Journey of regenerative agriculture[32]



Why is regenerative agriculture not widely adopted?

Despite being widely accessible and offering an appealing business proposition, regenerative agriculture experiences relatively low adoption rates among European farmers. This is primarily due to financial, technical, and psychological barriers, which are common challenges in the transition to other sustainable agricultural practices.

The costs associated with transitioning are not limited to the immediate increase in costs incurred through the adoption of new practices. They also encompass opportunity costs and potential losses, further exacerbated by existing financial burdens such as debt, sunk costs, and the challenges of low-margin business models.
Research indicates that regenerative agriculture has the potential to enhance profit margins though these do not materialise immediately and are contingent upon various factors, including geographical location and crop cultivated. Before profit margins can improve, it is acknowledged that short-term costs are likely to increase, and yields may reduce temporarily – the J-curve trendline – while both the soil and farmer are adjusting to new regenerative practices.[33,34]

Boston Consulting Group and Nature and Biodiversity Conservation Union (NABU) analysed the potential for regenerative agriculture transformation in German agriculture. The study quantified the transition's costs and revenues generated by farmers cultivating cereals and oilseeds over ten years and compared these outcomes to conventional farming.[35]

This analysis demonstrates that after implementing basic regenerative practices, including no-tilling, sub-soiling, and cover cropping, for a minimum of three years, farmers' can achieve financial sustainability with a noticeable profit margin increase – a minimum of 12% increase per hectare –, compared to traditional practices.[36]

> *This profitability primarily arises from cost savings. While there are some additional costs associated with soil analysis and balancing, such as testing and fertilizer (5% increase)[37], and species-rich cover crops, for seeds and operating costs (a net 3% increase after accounting for the associated reduction in other input costs) the overall savings are significant.[38] Adopting no-tillage practices and minimally disturbing subsoiling results in considerable costs reduction from reduced tillage and seed preparation even after factoring in the additional machine costs (a net 19% decrease).[39]*

Additionally, new revenue streams such as carbon credits or other payments for ecosystem services schemes, which monetise positive externalities such as biodiversity or water quality improvements, could further increase profits generated through the transition. However, we decided not to include these potential revenues in our calculations due to uncertainty around the demand and the volatility of the voluntary carbon market.

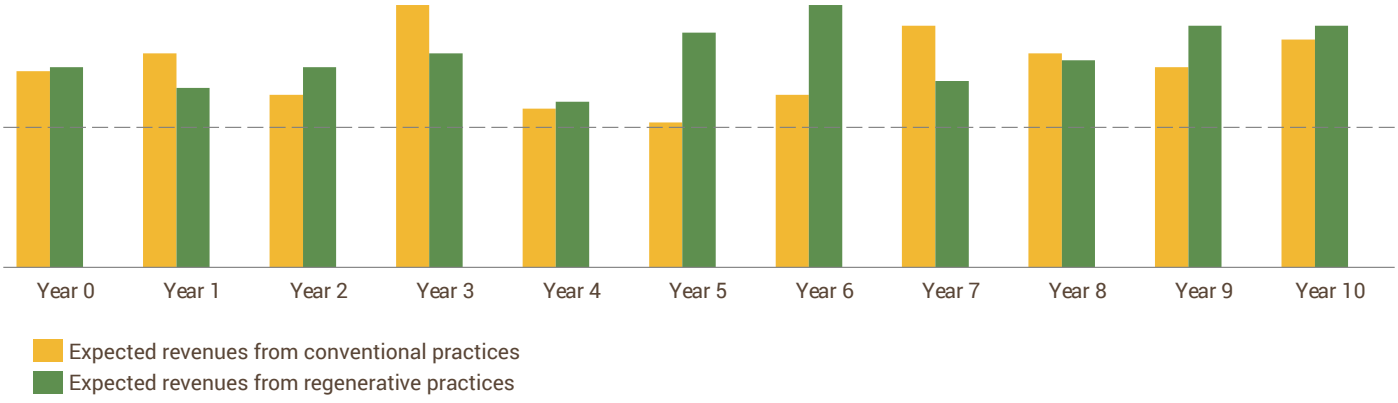
Given these profit margin projections, a significant paradigm shift towards prioritizing profitability over productivity is needed. This involves moving away from a yield, revenue, and volume-first mentality towards embracing business models that prioritise efficiency and environmental sustainability. This shift requires both technical and psychological adjustments from farmers. Technical capacity could be built through training and advice to understand the intricate soil processes and make informed decisions on how to enable the benefits of regenerative agriculture. Technology and data analysis could facilitate context settings and the identification of the most suitable implementation plan.

Psychologically, social norms and peer influence from pioneer farmers within same network or community, could play a critical role in the adoption of regenerative practices, due to their capacity to override individual risk perceptions which often overshadow real risks.[40] Social capital and networks play a critical role in providing farmers with practical support while fostering collaboration, which in turn boosts farmers' confidence on the potential positive outcomes of adopting regenerative methods.

The initial years of transitioning are viewed as the riskiest, where productivity and financial losses are a tangible possibility (Figure 3). The uncertainty surrounding market conditions and demand for both products and ecosystem services, along with the uncertain outcomes in the soil and the extended time horizon required for regeneration, make the transition appear daunting.

This initial phase of the transition, therefore, emerges as a critical phase fraught with risk but also ripe with opportunities for transformative change, provided there is adequate support and incentives for farmers to mitigate these challenges. The "valley of death" - a dip made of high costs and reduced returns[42] - could be rebranded as the "valley of hope"[43] underscoring the potential long-term benefits awaiting beyond the initial hardship. Costs become investments when farmers believe in the potential returns the transition could yield, trust the advice they receive, and have confidence in the regeneration process they undertake. Blended finance provides a framework to bridge this gap and incentives, a component of its toolkit, can play a crucial role. By providing temporary subsidies, de-risking mechanisms, or monetising positive externalities, these incentives can maximise impact and enable transactions that might not have occurred otherwise.

Figure 3: Revenue fluctuations and related risks of conventional and regenerative agriculture[41]



From Opportunity to Action

Who is promoting regenerative agriculture and soil health?

Overcoming the barriers hindering the transformation of European agriculture and the widespread uptake of regenerative soil-health practices requires the active mobilization of all stakeholders along the agri-food value chain. Both private market players and public actors are driving this transition, compelled by the need to adhere to climate policies and regulations, mitigate increasing environmental risks, and capitalise on emerging market opportunities. They are actively shaping the regenerative agriculture landscape through the provision of incentives to farmers (Figure 4).

To drive the transition towards sustainability, the European Union has embarked on an ambitious policy framework, anchored by the European Green Deal[44] (Figure 5). Its primary objective is the achievement of climate neutrality by 2050, to which agriculture plays a crucial role as referenced in the European Climate Law.[45] The EU Soil Health Strategy for 2030 outlines initiatives such as the establishment of a network of excellence on regenerative and organic agriculture[46] and the promotion of investments targeting soil health within the EU Taxonomy.[47]

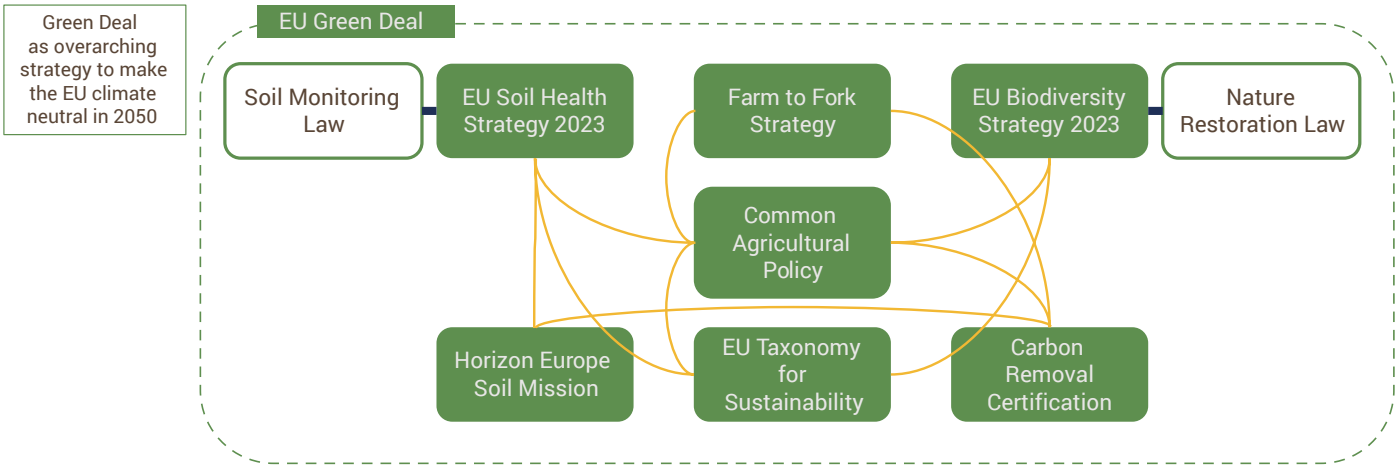
Additionally, the EU Biodiversity Strategy for 2030,[48] coupled with the Nature Restoration Law,[49] reinforce the importance of biodiversity conservation and restoration efforts to which the EU has committed to dedicate 7,5 % from 2024, and 10 % from 2026 of annual spending under the 2021-27 Multiannual Financial Framework.[50] The Common Agricultural Policy (CAP) is the cornerstone of European agricultural policy, shaping the future direction of the sector. The new CAP (2023-2027),[51] which was translated at the Member State level into the CAP Strategic National Plans, has raised the environmental standards of the Good Agricultural and Environmental Conditions (GEAC) and introduced as part of its pillar one, i.e., income support, the Eco-Schemes to incentivise, among others, soil health practices. The Farm to Fork strategy[52] complements these efforts with provisions on environmental sustainability, food security and safety, as well as considerations on farmers livelihoods and competitiveness. On CO_2 sequestration, European institutions are working on a framework to certify carbon removals and establish standards, i.e., QU.A.L.ITY criteria, based on quantification, additionality, long-term storage, and sustainability.[53]

Figure 4: Mapping of the players driving the transition to regenerative agriculture

	Corporates	Financial Intermediaries (Banking & Insurance)		Private Investors	Project Intermediaries	Donors
Offers	• Reducing climate risk exposure • Promote possible cost saving (payouts)	• Commercial bank; with farmers portfolio • Ethical banks	• Reinsurance • Insurance	• Impact venture capital • Impact private equity • National/Regional Funds • Crowdfunding	• Carbon Intermediary • Project developer advice • Traders • Platforms	• Foundations • Public donors
Drivers	• Improving brand image • Supporting net-zero commitments • Making value chain more sustainable • Ensuring future products availability	• Preserving key intermediation role • Exploiting market opportunities (carbon)	• Reducing climate risk exposure • Promote possible cost saving (payouts)	• Capitalising on financial returns offered by AgTech • Generating impact with investments in agriculture	• Exploiting market opportunities (carbon) • Capitalising on early improvements and adoption among farmers	• Contributing to enabling environment for policy adoption

This aims at facilitating the development of the carbon market and scaling of carbon farming practices. Together, these policy frameworks are providing a comprehensive roadmap for stakeholders at all levels to engage in and support the transition towards sustainable food production and more resilient agriculture.

Figure 5: EU Policy framework guiding the transition to sustainable agriculture.



The stakeholders involved in the regenerative transition include both established entities within the agri-food ecosystem and newcomers bringing innovations to the market. The landscape is divided between actors who are in pursuit of standardised and reliable methodologies to underwrite regenerative practices, and actors experimenting with new, tailor-made, farmer-centric support mechanisms.

The former are focused on integrating regenerative practices within existing frameworks to ensure consistency and scalability. Conversely, the innovative approaches championed by the latter aim to overcome specific barriers faced by farmers throughout the transition, as noted by the Yale Centre for Business and the Environment in 2024.[54] This diversity of approaches highlights the dynamic nature of the sector as it evolves to incorporate sustainable practices more broadly.[55]

Corporates are showing a growing interest in regenerative agriculture, launching diverse initiatives supporting farmers to transition to practices that increase soil health and carbon capture.[56]

Large, international companies are moving into the regenerative agriculture space, driven by environmental commitments and compliance requirements to net zero targets (CSRD,[57] SBTi[58]), and by the economic necessity of protecting the future of their supply chains.

> *"ESG managers are driving the change, not the consumers".*
> *Project Intermediary*

Securing sustainable raw materials is crucial for these companies to address an existing critical gap in resources, and to enhance preparedness as the current rate of land degradation threatens to further diminish available resources over time.

> *"We want to be able to fully off-take our material from organic and sustainable sources, but there is a huge availability problem of those materials."*
> *Corporate*

Launching regenerative agriculture programs within the value chain contributes to internal climate targets and the reduction of scope 3 emissions.

Nonetheless, only 8% of international agri-food corporations have set specific targets for financial commitments to support farmers' transition, and 38% have invested in small pilot projects aimed at establishing direct connections with farmers, leveraging pre-existing contractual relationships and proximity.[59] In partnership with other organisations, corporations also provide farmers with de-risking and technical support through these pilot projects. Their offering may include direct financing – mostly grants – compensation loss, off-take agreements, and capacity building such as advice on how to implement new practices and operate new machinery. While some stakeholders view the flexible boundaries of regenerative agriculture as an advantage, enabling them to engage with a wide variety of farmers, others see challenges in this approach. Specifically, the absence of a systematic method for measuring outcomes across projects and the reliance on context-driven strategies to support farmers represent significant barriers to scaling these initiatives.

> *"The advantage of regenerative agriculture is that it is not selective, therefore it is possible to engage a lot of different farmers".*
> *Corporate*

> *"We need more harmonisation to be able to compare and gain some clarity within the jungle we have today".*
> *Corporate*

Commercial banks, with significant farmer clientele, are keen to maintain their role as intermediaries and seize the opportunity rising from the agricultural transition. They strive to offer solutions to comply with the requirements outlined in the EU Taxonomy to measure the carbon footprint of their portfolios and take steps to reduce it; to de-risk their own business model by protecting clients from climate change threats; and to capitalize on opportunities particularly within the carbon market.

> *"As a bank, we are asked by regulators and society to show that we are a responsible stakeholder in society and are forced to set higher standards".*
> *Financial Intermediary*

Some banks that finance secondary production are encouraging their customers to prioritize and support better agricultural practices, for instance, by taking equity stakes in regenerative agriculture projects and offering farmers in their supply chain longer term purchase contracts for land or machinery at a favourable price.[60] Banks working directly with farmers are also incentivising the transition via sustainability-linked finance, which offers interest rate reduction according to sustainability scores. This innovative financing approach responds to the need for risk models for agricultural loans to include long-term environmental and social risks associated with the rapid loss of biodiversity and degradation of soil. Traditionally, these risks have not been perceived as material enough in existing risk models.[61] To capture and integrate social and environmental externalities in their models, banks are either relying on third-party certifications or developing new sustainability matrices. Key Performance Indicators (KPIs) used in these matrices cover a range of factors including energy use, animal welfare, impact on biodiversity, soil management, cooperative practices, and the social environment of the farm, which encompasses public awareness and communication with society. Despite innovation, there is a marked difference in access to finance between farmers, particularly by farm size, i.e., larger farmers and farm aggregators have greater access to credit and financial institutions. Thus, the tendency towards standardized approaches has resulted in a lack of diverse financial solutions, perpetuating disparities in financial access among farmers, especially disadvantaging smaller or less established ones.[62]

Regenerative agriculture represents an attractive proposition to many private investors, yet not at the scale needed to support farmers' transition. While traditional agricultural investors remain focused on infrastructure development, equipment and machinery, or biotechnology, impact investors are seizing this new market opportunity favouring technology and digital solutions that can be scaled enough to benefit, often indirectly, a wide network of farmers.

> *"Private investors are important because they are taking risks and helping bring innovators to market".*
> *Private investor*

> *"We are always looking for technologies that will make farmers' life better – understanding what is the best solution, the best crop, the best cover crop".*
> *Private investor*

Impact investors active in the regenerative agriculture market can be grouped into five fronts: **i) social ventures**, which develop their investment strategy around soil health and invest primarily in technology and digital solutions; **ii) social asset managers**, which are firms investing in agri-food companies and allocating a portion of their portfolio specifically to regenerative agriculture; **iii) innovative models like crowdfunding platforms**; **iv) family offices** whose impact thesis is centred on soil regeneration, enabling a wide range of investments that span different risk-return profiles; and **v) land investors** that buy agricultural land with the objective of increasing its long-term value through regenerative practices.

> *"Soil is the most undervalued asset on the planet because nobody's valuing what happens underneath it."*
> *Private investor*

In many cases, capital is patient with an average holding period of around five years, up to ten years to enact the transition and fully reap its benefits. Direct investments into farmers' businesses, however, remain limited due to high risks, low returns and constraints associated with certifications such as organic. While labelling simplifies the due diligence process and can be easily aligned with investment strategies, this alone is not sufficient to tackle the dual challenge of adapting to climate change and sustaining food production while also providing attractive financial and environmental returns.

> *"It helps that organic is an established market. On the other hand, the terminology around regenerative is not very clear."*
> *Private investor*

> *"The fact that it's organic certified is no guarantee that there is a good soil management."*
> *Corporate*

Indeed, the success of these investments often depends on the consumers' ability and willingness to pay premium prices for labelled and certified products. However, limits to the demand for these products exist and can be significantly enhanced by broader economic conditions, prompting the need for additional incentives.

The status of agriculture presents a significant challenge to the insurance industry due to the heightened uncertainty arising from climate and environmental risks, and the consequent evolving patterns of pests, diseases and other events damaging crops. In fact, as risk exposure and frequency of insurance claims are expected to rise due to climate change, risk-based premium levels are projected to increase accordingly. This escalation in premiums could create challenges in terms of both affordability and availability of insurance products that provide coverage against climate-related disruption.[63]

In addition, the increasing unpredictability of extreme climate events will undermine insurers' ability to accurately predict the likelihood of future losses and, consequently, hamper their capacity to precisely price their insurance products.[64] In face of this existential threat to the industry, insurance and reinsurance companies are gradually offering weather insurances and/or crop yield protection as well as taking the first steps to develop specific products for the regenerative agriculture transition to build resilience against such scenarios. Although there is a growing engagement in programs and pilots focusing on crop protection from extreme weather and climate-related events, there is still a significant gap in insurance coverage for economic losses, with only 25% currently insured.[65] Insurance products tailored specifically to the regenerative agriculture transition are still in their infancy but address those losses and protect farmers against a possible reduction in yield. These products are typically small-scale, tailor-made, and designed around specific regenerative practices and risks. They involve only farmers at the project level and compare those farmers with similar ones who are not going through the transition to quantify the pay-outs and compensate for losses that can be directly attributed to the implementation of regenerative farming practices.

Project intermediaries, including both for-profit and non-profit entities, support farmers transition and fall into two main categories: carbon players or soil-health advisors. Soil is an important carbon sink that can be monetised in the carbon market and therefore represents an opportunity for farmers to gain extra revenue through the transition, and for corporates to offset their Scope 1, 2, 3 emissions.

> *"Carbon allows them a new revenue stream with the same asset, independent from the government".*
> *Project Intermediary*

Carbon players are seizing the opportunity by acting as brokers between demand and supply in this market. Their business models may involve providing agronomic advice on how to maximize soil carbon sequestration, offering Monitoring, Reporting, and Verification (MRV) technology and methodologies to measure and certify carbon content, placing carbon units in the marketplace, and making upfront payments to farmers in exchange for a later share from carbon sales. Given the relatively limited value that can be extracted per hectare from carbon alone, soil carbon actors are enhancing the quality of their carbon credits by adding additional ecosystem services layers, capturing positive externalities generated by famers like improved biodiversity or water retention. With this broader focus on soil health and ecosystem services, new actors have emerged offering advisory services that fill a significant market gap.

These services are independent from and go beyond the advice traditionally offered by input suppliers.

> *"Advisory is currently being provided by the sales team of inputs and machineries companies, who recommend farmers the use of bigger tractors, more inputs etc."*
> *Project Intermediary*

Starting with soil-health assessments to identify context-specific needs, soil-health advisors support farmers with the development and implementation of a regenerative transition plan tailored to the specific needs and objectives of the farmer. Often, these advisors can be farmers themselves who, instead of profiting from the sales of productivity-enhancing products, base their business models on building long-term, trusted relationships for continuous and ongoing advisory support. In addition to technical expertise and analysis, they offer coaching, educational support, and assistance with the adoption of new practices and tools.

Philanthropic donors and private foundations' involvement in the regenerative agriculture space remains relatively limited in the European landscape as they primarily operate in the Global South. They support farmers through the provision of both unconditional and conditional grants to cover expenses that are challenging for farmers to recover, usually through a technical assistance facility. Compared to other stakeholders, conditionalities are attached to less stringent protocols, relying for example on trust-based systems, which are less costly than certifications.

> *"We do not do a lot of measuring on purpose. Clients do not come with a quantity of carbon to sequester but want a story about social impact"*
> *Project Intermediary*

Despite the growing interest in incentivising the transition to regenerative agriculture, various stakeholders are still in the experimental phase, grappling with the best approaches and methodologies. For this reason, the number of actors involved remains relatively limited, and scalable, effective solutions have yet to emerge. Although the market for regenerative agriculture is still immature, lacking a well-defined framework to guide actions and investments, there is recognized potential for growth.

Are existing incentives effective?

Over a ten-month period, from May 2023 to February 2024, the KOIS team had catalogued and assessed 29 types of incentives (Figure 6) available to farmers across SoilValues' six European countries. With the exclusion of fiscal measures and tax regimes, incentives are here instruments employed by both public and private entities to encourage farmers to preserve or enhance soil health and ecosystem services beneficial to them and others, while simultaneously improving agricultural productivity and competitiveness.[66]

In our pursuit of fostering the proliferation of viable business models that enhance soil health,[67] we consider an incentive effective if it can drive farmers' wide adoption, has a demonstrable positive impact on the quality of the soil, and positively contributes to the farmer economic performances and objective.[68,69] Based on this three-layers assessment framework, our research has underscored that **no single incentive is effective in isolation, and no individual instrument or scheme can single-handedly drive farmers towards regenerative agricultural practices while simultaneously enhancing the viability and attractiveness of their business models.**

Figure 6: Incentive types available to farmers in Europe

Advanced carbon payment	Conditional subsidies	Off-take agreement
Agronomic advice	Direct investment	Payment for Ecosystem Services
Business advice	Guarantee	Peer-to-Peer support
Carbon finance	Indirect investment	Price premium
Certification	Insurance	Research & Innovation
Communication campaign	Mentoring / Coaching	Rent deduction
Compensation loss	MRV technology	Revenue-sharing agreement
Concessional loan	Multi-crop off-take	Subsidies anticipation
Conditional grant	Networking	Training
Conditional lease		Unrestricted Grants

While some incentives exhibit potential in environmental or economic terms, farmers' adoption is hindered by various factors such as programs' scale, outreach challenges, uncertainty, and bureaucratic procedures. Some programs developed by agri-food companies are still at the pilot stage, targeting a limited number of participants by design, and lacking scalability for broader application.

> *"We offer farmers a fall-back system if harvests should fail on a pilot scale. We cannot do this with all farmers in our value chain. This is impossible."*
> *Corporate*

Public subsidises may see a lower uptake due to inadequate communication,

> *"...were communicated poorly, and with quite big delay [...] communication on what does it mean, what it can bring, started very late"*
> *Policy*

whereas research and innovation schemes from European or member states institutions tend to reach only a niche community of experimental farmers, remaining unknown to the wider audience who is expected to benefit at a later stage from best practices dissemination among farmers

> *"...a lot of schemes they can apply to and be included into, but it's not so that all farmers would be part of these schemes. We would have some best practices showing the way and you will see how this can be spread to other farmers."*
> *Policy*

Additionally, carbon finance faces resistance from farmers, primarily due to volatility of market conditions and the unpredictable nature of revenue generated from these practices.

> *"It was very good last year, and it's not so good this year because of the voluntary carbon market getting a lot of beating and therefore the price of credits going down. So, it's not an ideal way of incentivizing."*
> *Project intermediary*

This uncertainty is a concern shared by other stakeholders along the value chain, stifling the initiation of related incentive programs such as insetting schemes. Finally, certification schemes have not proven appealing to many small-scale farmers due to the significant procedural burdens and resource demands, which when weighed against the benefits, do not always present a cost-effective solution. Severe and heavy bureaucratic processes are a significant barrier to adoption.

> *"First thing is bureaucracy. They have to write so many checks and formulas [...] it's very difficult to apply and they are afraid to be sanctioned."*
> *Policy*

Compliance struggle can render incentives unattractive to farmers who have limited capacity and face significant trade-offs when it comes to resource allocation.

Some incentives are not effective because their impact on soil health is challenging to measure and verify. Without clear conditionalities or robust monitoring systems, these incentives are often deemed ineffective, as they fail to establish a direct causality between the promoted farming practices and improvements in soil health.[70] The absence of a unified framework for monitoring and evaluating regenerative agriculture has led many programs to develop bespoke systems, some more rigorous than others.

While our research did not delve into assessing the robustness and accuracy of these MRV (Monitoring, Reporting, Verification) systems, we register increasing scientific agreement on the possibility to construct simple, credible assessment frameworks for soil health. Though processes need to be transparent. The lack of clear definitions, standardized procedures, and stringent requirements increases the risk of these incentives not effectively supporting soil health improvements. Moreover, claims of greenwashing in the regenerative agriculture sector are often linked to these deficiencies—unsubstantiated claims and weak definitions, coupled with lax MRV processes, can undermine the credibility and effectiveness of regenerative practices.[71, 72]

Other incentives fail to provide farmers with a cost-effective and economically viable opportunity to adopt new practices or alter their operations. Enhancing the pricing and/or budget allocation of some schemes could potentially make them more attractive, as has been noted in discussions around public subsidies or the pricing of carbon units in the voluntary carbon market. However, the shortcomings of certain incentives are not always so easily rectifiable. For instance, high transaction costs can make incentives ineffective regardless of the financial disbursement provided.

> *"If it's a small farmer [...] doing commodities which are under cost-pressure. It'd be difficult for a farmer to pay everything".*
> *Project intermediary*

In such scenarios, technological innovations and economies of scale have the potential to reduce these costs, thereby enhancing the viability of these schemes. Additionally, the financial repercussions of implementing specific practices can act as a significant barrier to adoption. Problems may arise for farmers who have already invested in specific machinery and operations or are still paying off existing debts.

> *Farmers are stuck in a system [...] want to regenerate but cannot anymore because they have too much credit. So, it could be of help to get less pressure [...]*
> *Project intermediary*

Often farmers find that new incentives do not adequately address the broader impacts on their financial statements or that perhaps the benefits those deliver are marginal in their business model.

> *"The impact of reduced interest of 0.5%, (equivalent to 20 basis points), translates to a couple of thousand euros (ranging from 5-10K or 2K euros), is not expected to significantly influence farmers' behaviour. This represents a relatively small amount within the overall profit and loss statement of farmers."*
> *Financial intermediary*

The effectiveness of incentive mechanisms associated with specific farming practices cannot be uniformly assessed or universally applied due to the diverse conditions across different agricultural contexts. Firstly, soil characteristics are a crucial factor to consider, as varying soil types necessitate bespoke interventions. This variability makes farmers' needs, which incentives aim to address, highly dependent on specific local conditions. For instance, in regions where soils are extensively degraded by intensive agriculture, regeneration efforts are likely to affect yields and profitability, rendering incentives economically ineffective according to our framework.

> *"In the midst of a nitrogen crisis, the lack of a long-term agricultural vision for a region and discussion on what could be the total volume that will be possible to produce from that soil, makes any investment decision very difficult."*
> *Policy*

Furthermore, applying exclusion criteria to practices typically considered non-regenerative may not always result in favourable soil outcomes, especially under certain climatic and weather conditions where such practices might otherwise be recommended.

> *"...attempting no-till on very heavy, compact soil. This land, previously a marsh that got drained for farming, struggled with it because of poor water penetration. The land needs aeration, but without ploughing, seeding was impossible"*
> *Project Intermediary*

The type of crop cultivated and the agricultural system employed also influence the suitability of incentives.

> *"Carbon sequestration is not always a viable proposition to farmers. When dealing with farmers growing potatoes, the cost-benefit analysis of implementing carbon farming is not favourable and switching to more suitable crops which are less profitable is not convincing."*
> *Financial intermediary*

Factors such as operational efficiency and cost-effectiveness, crucial for both demand and supply of incentives, can also play a significant role in this evaluation. Additionally, the size of the farm impacts the effectiveness of incentives, particularly as many of these are based on per hectare, per year allocations, which inherently favour larger farms that benefit from economies of scale, over smaller ones who constitute the vast majority of EU farms.[73]

> *"A lot of farmers leveraging carbon credits are in Eastern Europe because there are bigger farms, which are usually more professional and run by bigger corporations."*
> *Project intermediary*

The demographics of farmers adopting these incentives, along with their personal attributes and circumstances, are also vital factors to consider.

> *"You have young, dynamic farmers who just took over the farm of their parents and want to do something different. Then you have older, innovative, and economically driven farmers who need facts to be convinced. Then you have farmers who struggle and have tried other things."*
> *Project intermediary*

Relationship with the land and the ability to capture its full value influence farmers time horizons, enabling landowners to more easily align with the timeline required for regeneration.

> *"A landowner farmer is going to be a lot more sensitive towards these types of practices. Because the land is his own asset, and he knows that he's had this asset for generations and he wants to give it to the future ones."*
> *Project intermediary*

Understanding these personal traits and the communities farmers belong to, is essential not only for assessing the effectiveness of incentives but also for evaluating the broader attractiveness of regenerative agriculture.

Lastly, the local context plays a pivotal role in the effectiveness of incentives, as climatic conditions, regulatory environments, and institutional leadership can act as either an obstacle or an enabler for specific incentives and regenerative, soil-health practices. These contextual nuances necessitate a tailored, place-based approach to incentive design and implementation, ensuring they are both appropriate and effective within their intended contexts.

This holistic understanding of all factors at play is essential for developing effective incentives that genuinely encourage the adoption of regenerative agricultural practices and respond to the most pressing needs of the farmers.

Given that individual incentives alone do not consistently yield positive soil outcomes or enhance farmers' business models, and their viability varies depending on context, to incentivise farmers in the transition it is more effective to take a holistic approach. Instead of focusing on individual instruments, we group them in three categories based on farmers' support needs. We concentrate on three key types of support mechanisms: **financing, de-risking, and technical assistance**, addressing the different, multifaceted challenges faced by farmers transitioning to regenerative agriculture (Figure 7).

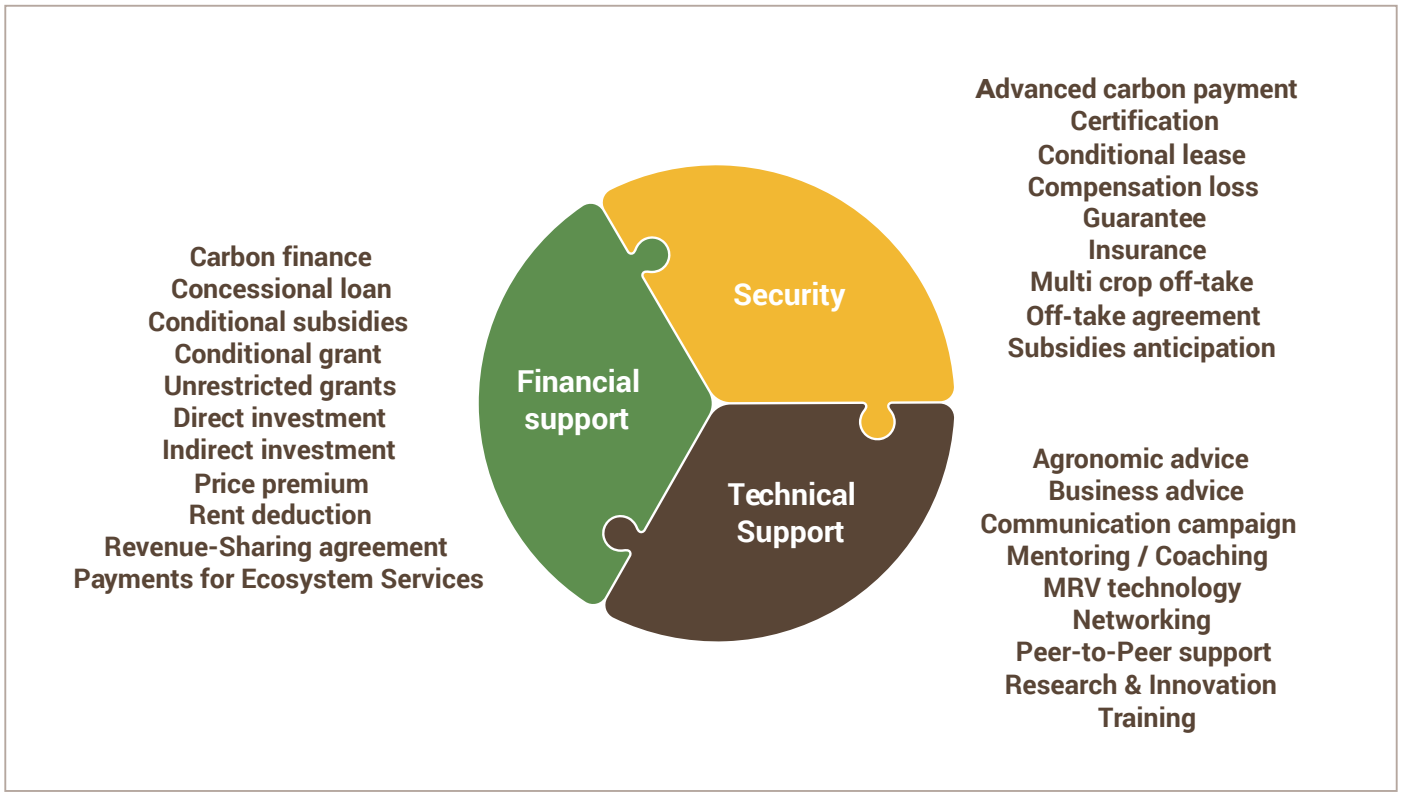
Financing support includes direct monetary transfers to farmers as well as the facilitation of potential financial benefits such as new revenue streams or cost reductions.

The primary aim of incentives under this category is to provide immediate or future financial gains to encourage and reward the adoption of regenerative, soil-health practices. This could involve upfront payments to support initial changes or performance-based incentives that reward farmers for the results achieved.

De-risking support focuses on reducing the uncertainties associated with both current and future financial statuses and asset values. This can include advanced payments for potential future revenues to provide immediate financial security, as well as insurance or compensation mechanisms that offer financial protection in the event of unforeseen losses. De-risking also involves securing guarantees for product off-take and land rights, thus providing a more stable operating environment.

Technical support equips farmers with the essential knowledge and tools needed to implement and sustain new agricultural practices.

Figure 7: Incentives Categorisation based on type of support.



This support is typically provided by external experts or experienced farmers and includes access to the latest research, best practices, innovative technologies, and agronomic or business management advice.

Technical support enhances farmers' expertise and capacity and, besides being offered in the form of in-kind contribution, can be coupled with financial backing to ensure that cost barriers do not impede access to this assistance.

Recommendations

While the regenerative agriculture landscape is still in the early stages, a growing number of stakeholders are actively incentivising European farmers into the transition. In this chapter, we propose a series of recommendations to effectively support organisations aiming to incentivise the adoption of regenerative farming practices that improve soil-health and farmers' economic performances. Recognising that no individual instrument can singlehandedly drive this transition, our recommendations revolve around design approaches, the types of support provided, and strategies for scaling.

1. Focusing on farmers' needs, recognising the specificities of the local context, and combining practice and outcome-based targets is essential to ensure incentives are designed to effectively benefit both farmers and the soil.

Farmer-centric design. While investments in technologies and digital solutions may present higher returns and appeal to a wider range of stakeholders, they often overlook the immediate and critical needs of farmers embarking on this transformative journey. The early stages of the transition, particularly years zero through three, are characterised by high uncertainty and the absence of a fully commercial proposition. It is during this phase that incentives are most needed, alongside concessional capital i.e., taking greater risks or accepting lower returns,[74] before market-based solutions and more commercial capital can take over. This farmer-centric approach involves identifying the challenges, understanding the needs, and tailoring support mechanisms consequently. Technology could play a role in supporting experimental activities and context setting. These efforts aim to build evidence around best practices and effective strategies, thereby facilitating the development of a comprehensive and actionable implementation plan. It is also in this early stage where the greatest untapped potential exists and where the most significant impacts on both farmers and soil quality can be realised. With adequate incentives during this critical period, not only modelling future outcomes becomes possible, but farmers are also better positioned to access subsequent, more conventional forms of support.

Place-based design. Focusing on the specificities of the context is key for effective incentives as outcomes can vary widely depending on the local environment, climate, soil type, crop choice, and socio-economic conditions in and around the farm. Place-based investing focuses on directing capital to specific geographic areas to address local challenges and opportunities, fostering financial returns but also generating positive social and environmental impacts tailored to these unique local needs.[75] In the context of supporting farmers' transition to regenerative agriculture, place-based investing allows for solutions to be tailored to the local context, acknowledging that broad standardisation is neither feasible nor effective. This method involves a higher level of analysis common to many farmers in a region, considering the geographic, institutional and regulatory environment, before zooming in on farm-level specifics such as soil and crop types, agricultural practices, farm size, and farmer profile. By doing so, place-based investing ensures that investments are tailored to maximise impact, enabling farmers to adopt the most effective regenerative practices suited to their circumstances.

Practice and outcome-based design. Mixing incentives targets is essential to enhance effectiveness, i.e., adoption, soil health, and economic benefits.

Given that soil outcomes are long-term, difficult to predict, and influenced by factors beyond farmers' control, and that overall impact evaluation can be difficult and costly, it is better to avoid purely outcome-based incentives that place all the risks on farmers. Nevertheless, instead of prescribing specific practices as it is currently done by most incentives, we should offer a menu of options for farmers to choose from based on their experience and understanding of their specific context. With upfront capital and resources made available, this approach empowers farmers to implement practices best suited to their unique conditions. On the other hand, it is crucial that these incentives do not create market distortions by promoting farming practices without verifiable impact on soil health. To address this, a complementary system to reward outcomes should be established, enabling farmers to access additional revenue if they achieve pre-agreed impact targets, thereby motivating them to maintain their focus on impact. 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.

> *"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*

2. Mixing financing, de-risking, and technical support is crucial to equip farmers with the necessary resources to navigate the challenges of the initial stages of the transition.

Technical assistance provides the requisite knowledge and tools for farmers to develop and implement effective transition plans. At the outset of the regenerative agriculture journey, crucial components include agronomic guidance, data collection and analysis, as well as peer-to-peer networking and mentorship from more experienced practitioners. To ensure the integrity of this support, all technical assistance must be dedicated, bespoke, and independent from companies selling agricultural inputs and machinery. Moreover, technical assistance should be built on trusted and long-term relationships, encouraging farmers' proactive attitude towards continuous learning and improvement. It is through these sustained interactions that farmers can truly commit to and thrive within the transition process, ultimately leading to better regenerative, soil-health agricultural practices.

Financing is essential given that the transition to regenerative agriculture involves substantial additional costs, while farmers often grapple with the financial constraints of previous investments and existing sunk costs that limit their ability to invest. The potential savings realised early in the transition are often insufficient to offset the increased operating expenses, such as labour and other recurring costs associated with adopting soil-health, regenerative farming practices. Consequently, access to additional finance is paramount. However, financial support should not primarily promote high capital expenditure investments, which might be necessary later in the transition for new machineries or in the very beginning to acquiring land. Instead, the focus should be on facilitating farmers' access to the goods and services essential for effectively operationalizing the transition.

As highlighted by a pioneer regenerative farmer, initial investments should prioritise life — this being labour, seeds, compost.

De-risking is necessary in the transition to regenerative agriculture, particularly in the early stages, as farmers bet on the prospective long-term benefits of the new practices they adopt. These results are contingent not only on their efforts but also on external conditions beyond their control. To mitigate these risks, financial compensation and insurance payouts can be utilised to cover potential losses when and if they arise. Another effective strategy is reallocating risks from farmers to other stakeholders within the value chain who are better equipped to manage them, for example, by providing certainty in the off-take of cultivated crops and the ecosystem services produced. Stakeholders at the other end of these transactions can significantly aid farmers, while being rewarded for agreeing to bear the risks associated with off-take. Additionally, risk mitigation must be a core focus of the technical assistance provided to farmers as they develop their transition strategies. A well-designed transition plan must strike the balance between improving soil health and preserving farmers' profitability. Even if the volume of production decreases, profitability should remain positive. This 'prudent strategy' involves minimising the initial financial burden of the transition by adopting low-cost, high-impact soil-health practices. These practices should leverage existing know-how and technical capabilities, thereby reducing the overall financial risk associated with the transition.

> *"Our goal is to first of all reduce the costs of the farmer and that's the first thing regenerative agriculture can do. … really depends on the context. … and then the profitability comes from that as well. We don't want to add more things on farmer, who's in trouble already economically."*
>
> *Project Intermediary*

3. Aggregating farmers and enabling multi-stakeholder collaboration is key for successfully scaling incentives.

Aggregating farmers through cohorts mitigates overall investment risks and fosters positive social dynamics, including peer-to-peer influence through knowledge exchange and community development. Employing a portfolio approach—be it via a fund, program, or other initiative—not only facilitates risk distribution but also decreases transaction costs through economies of scale, laying a solid foundation for scalability and replicability. Moreover, if aggregation is coupled with some level of coordination executed either by the farmers themselves or a designated third-party organisation, this strategy can also enhance the farmers' market access and negotiating power. Beyond the traditional cooperative model, which is well-established in the history of European agriculture, other forms of association among farmers can also promote simultaneous aggregation and coordination, thus providing a more reliable and predictable environment to operate in.

Multi-stakeholder collaboration to incentivise regenerative, soil-health farming practices is pivotal in spreading risks across different actors while simultaneously aligning diverse interests and leveraging their unique strengths and efficiencies. No single organisation is suited to provide all the necessary financing, security, and technical support, thus making the case for complementary partnerships.

Blended Finance

An innovative solution to implement the above recommendations and effectively incentivise the transition to soil-health, regenerative farming practice is blended finance. Blended finance represents a strategic approach to leverage public, philanthropic, and private capital to achieve sustainable development goals. By combining these diverse sources of funds, blended finance seeks to mobilise private investment into areas that might otherwise be considered too risky or unprofitable.[76] Different stakeholders are motivated by various returns – financial, social, environmental, or a combination of these – and effective financial structures must acknowledge and integrate this diversity. Blended finance enables co-investment from different stakeholders, allowing each to achieve their unique objectives while mobilising one another.

The catalytic nature of blended finance is particularly recognised for its ability to use public and philanthropic capital to attract private sector investments by realigning incentives, reducing costs, and mitigating risks. All this is vital for supporting the shift to regenerative agriculture. Furthermore, based on the 'minimum concessionality' principle, concessional capital should be used carefully to minimise market distortions while maximising the leverage with private, commercial capital. Blending capital providers is particularly effective in financing the transition to more sustainable practices, effectively bridging the funding gap between purely grant-based models and market-based products. By integrating different actors, risk-return profiles, skills, and expertise, blended finance facilitates the progression of farmers to subsequent phases where other actors or financial strategies can engage them on more commercial terms.

Global Best Practices

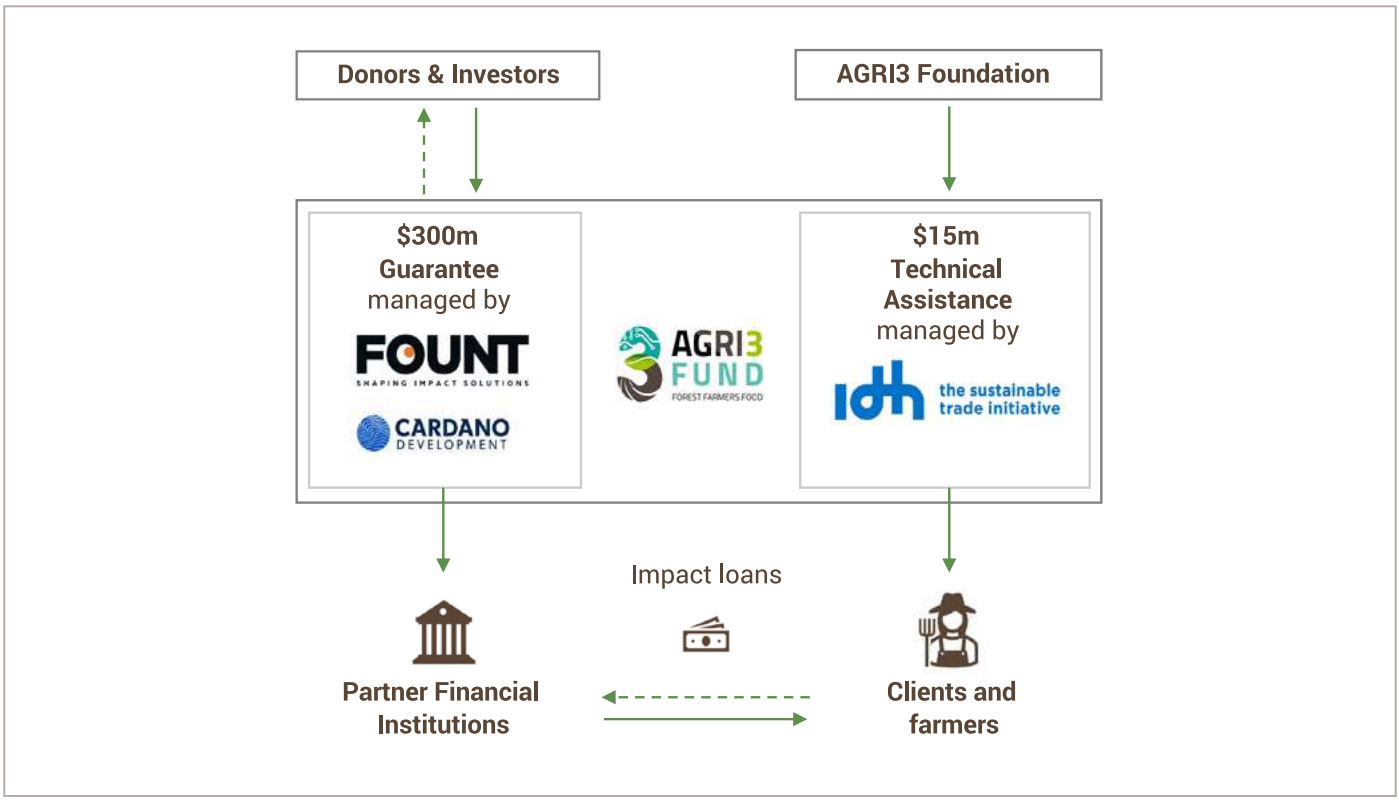
We have selected three compelling examples of mechanisms to incentivise sustainable agriculture practices in the Global South and the United States that could be replicated in Europe. These case studies illustrate how providing diverse and comprehensive support to farmers, adopting a multi-stakeholder approach, and leveraging blended finance can effectively drive the transition.

AGRI3 Fund

The Agri3 Fund,[77] established in 2020, aims to support sustainable agriculture practices, protect natural forests, restore ecosystems, and improve rural livelihoods in developing markets by leveraging blended finance. The Fund stands out for its comprehensive support approach, which encompass financing (loans), de-risking (guarantees), and technical support (Technical Assistance Facility), tailored to the specific contexts of its investees. With a capital base exceeding $85 million, alongside $300 million in guarantees managed by FOUNT and Cardano Development, and a $15 million TA facility led by The Sustainable Trade Initiative (IDH), the Fund seeks to mobilize over $1 billion in impact loans from traditional financial institutions. The Fund operates as an evergreen loan guarantee fund with a blend of grant, equity, and debt funding.

The Fund provides partial risk guarantees and credit enhancement instruments to partner financial institutions, to catalyse finance to sustainable land use projects. Loans typically range from $5 million to $10 million, with AGRI3 Fund covering 30% to 50% of the exposure. The Technical Assistance facility supports project design, impact monitoring, and knowledge sharing thus further derisking investments. AGRI3 Fund repays investors through various revenue streams, including fees from issuing partial loan guarantees, interest on subordinated loans, and returns on liquid investments.[78] Through this blended structure, the Fund succeeds in incentivising farmers to implement sustainable practices by creating an attractive and viable investment proposition for financial institutions to lend to farmers and other clients committed to the preservation and regeneration of natural ecosystems.

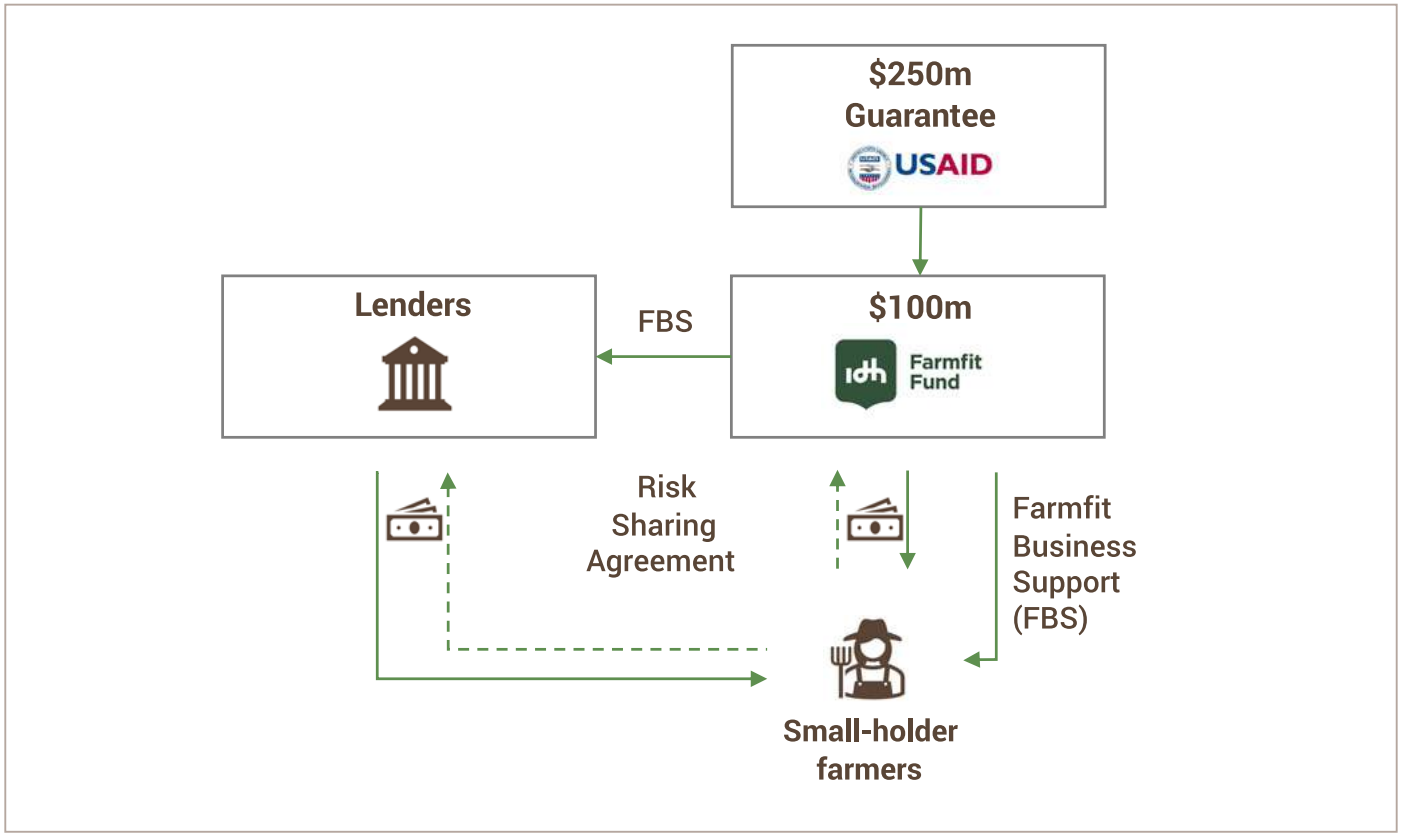
Figure 8: Financial structure of the AGRI3 Fund



IDH Farmfit Fund

The IDH Farmfit Fund,[79] launched in 2018, aims to de-risk smallholder financing to support sustainable agricultural practices in developing countries across Africa, Asia, and Latin America. It exemplifies how leveraging a blend of public and private capital alongside technical support for investment readiness, can foster sustainable agriculture while improving farmers' livelihoods. The Farmfit Business Support, a $30 million technical assistance facility, refines smallholder farmers' business models by assessing cost efficiency and financial sustainability, tailoring the analysis to the specific value chain, sector and geography. This technical support not only directly benefits the farmers, but also inform investors' decisions and facilitate effective matchmaking between demand and supply. The USD 100 million IDH Farmfit Fund is capitalised by value chain companies, financial institutions, as well as development agencies. It provides concessional financing to farmers in the form of guarantees, loans, mezzanine, equity, and is also supported by a second loss guarantee facility from USAID of up to USD 250 million to effectively attract additional lenders. Through a risk sharing agreement, the Farmfit Fund and the farmers each assume 10% each of the first losses, whereas lenders and USAID equally absorb the remaining 80% of the second losses. Through distributing the risks and providing catalytic investments to smallholder farmers, the IDH Farmfit Fund mobilises commercial lenders to providing affordable financing to communities often marginalised by traditional financial institutions.

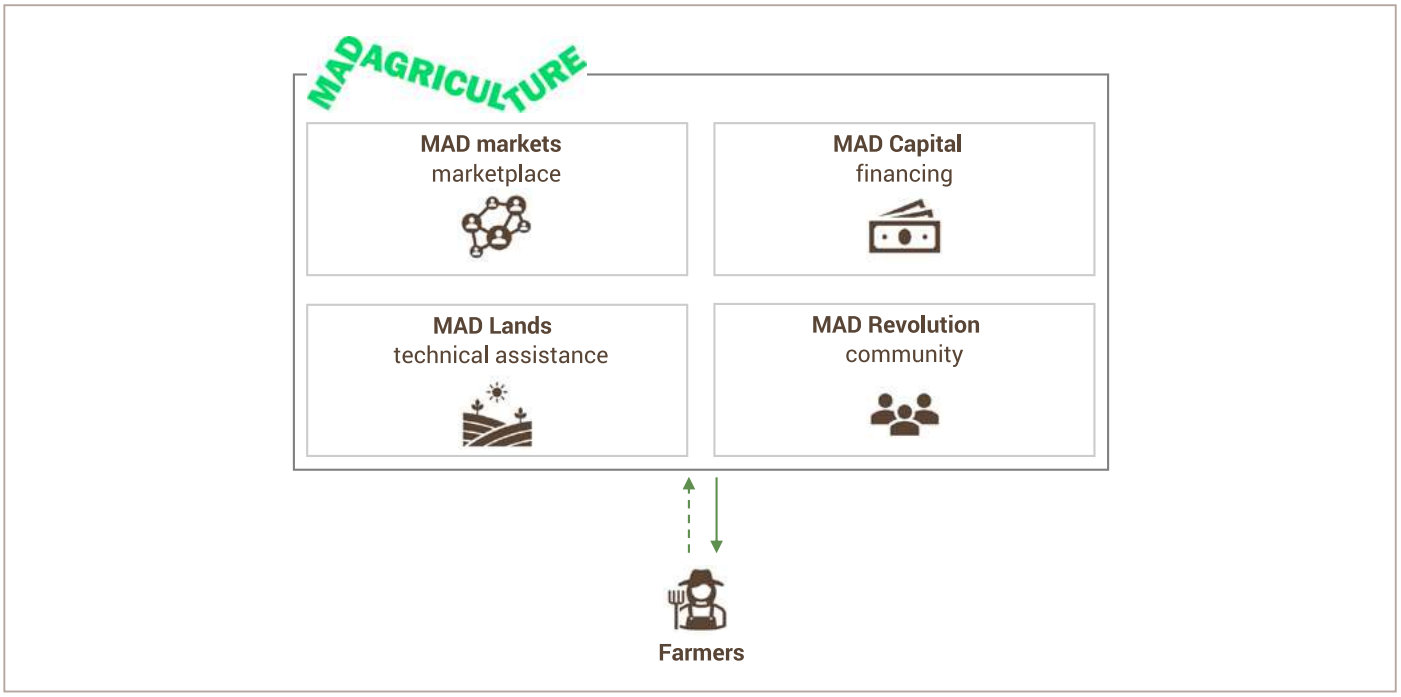
Figure 9: Financial structure of the IDH Farmfit Fund



MAD Agriculture

MAD Agriculture is a non-profit organization founded in 2018 that offers a comprehensive suite of services to support farmers in their transition to regenerative organic agriculture in the United States.[80] Their model exemplifies how financing can be adapted to farmers' specific needs to accelerate the transition by offering tailored loans at favourable conditions alongside technical assistance while also connecting farmers to a wider network of stakeholder. It comprises of four sister companies, each offering dedicated types of support (MAD Markets, MAD Lands, MAD Revolution and MAD Capital), each offering dedicated type of support but together helping farmers develop and implement a transition plan towards regenerative, organic farming across a 5 to 10 years horizon. MAD Lands offers strategic support through land and business planning co-created with farmers. It focuses on developing a transition plan that is aligned with both business and ecological objectives. MAD Revolution serves as a community network of farmers, scientists, businesspeople, artists, and activists that fosters intra-group communication and knowledge-sharing. Though not yet fully operational, MAD Markets aims to provide innovative marketplace solutions by partnering with supply shed intermediaries and brands. Finally, MAD Capital launched in 2021 the Perennial Fund which offers long-term adaptive loans to organic, regenerative, and transitioning farmers at all stages of their journey, from those just beginning the transition to those looking to expand. Its offering started with operating loans and was later expanded to real estate and land loans, equipment and infrastructure loans, and transition loans. The Fund closed at $10 million with funding from 42 investors. The bulk of its exposure lies in operating loans, which operate as a revolving facility with interest payments starting in the first year, allowing farmers to reinvest in their farmland.[81] In 2024, MAD Capital launched Perennial Fund II targeting $50m with investments from institutional as well as philanthropic investors such as the Rockefeller Foundation. By leveraging blended finance and first-loss capital,[82] the Perennial Fund II addresses the needs of the farmers while simultaneously developing an attractive proposition for investors seeking both impact and financial returns. Overall, MAD Agriculture showcase how comprehensive support, crucial for farmers in the early stages of the transition, can be effectively unified under one umbrella.

Figure 10: MAD Agriculture's ecosystem



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CONSULAI www.consulai.com

ELO European Landowners' Organization

KOIS CARING FINANCE

KU LEUVEN

ILVO Flanders Research Institute for Agriculture, Fisheries and Food

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