Forum for the Future of Agriculture®

Developing & scaling regenerative agriculture in Europe & beyond

Inquiry and workshop series 2022-23

Our findings

Foreword

The food and agriculture system possesses the human know-how and ingenuity, innovation and technology, and natural capital, to increase its productivity, resilience, and sustainability, as well as restoring lost biodiversity, reducing its own carbon footprint and removing billions of tonnes of carbon from the atmosphere and locking it up in soil, forests, peatland and wetlands.

Realising this potential has never been more urgent and regenerative agriculture, whilst not a panacea, may prove to be one of the leading solutions to this challenge.

Whilst interest has grown considerably in this approach over the past decade, it is also true that differences of opinion have emerged on the costs and benefits and how to develop and scale it further.

Over the past year, we have undertaken an inquiry designed to deepen the understanding of these different perspectives both in Europe and the United States and beyond. Through a series of workshops, interviews and consultation with the Forum's network, we focused on capturing insights, ideas and solutions for developing and scaling regenerative agriculture from farmers and land managers; the agri-food value chain; and from policy-makers, civil society and key opinion leaders.

We were particularly interested in how these groups of stakeholders viewed regenerative agriculture and what they saw as the potential benefits and costs. We also wanted to understand what these stakeholders saw as the barriers to developing and scaling and, conversely, what would enable the accelerated adoption of regenerative agriculture.

These insights and perspectives are contained in the report which follows. This is not a conventional research report but – in keeping with the influential convening role that the Forum aspires to play – attempts to give voice to those stakeholders who can and will play a key role in determining the extent to which regenerative agriculture is further developed and scaled in Europe and beyond. In doing so, our hope is that it will catalyse practical ideas and thinking on how to speed up the adoption of regenerative agriculture and, where relevant, similar approaches to building a more resilient and sustainable food system.

With the alarming loss of biodiversity, in an important part caused by unsustainable agriculture practices, growing pressure on the eco-systems upon which the food system depends, and the increasingly apparent transition from 'global warming' to 'global boiling', the need for urgent action could not be greater. It is for this reason that regenerative agriculture, whilst not a silver bullet, appears so prominently in the Forum's Call to Action that we announced earlier this year, and why we are pleased to publish this report.

We hope it stimulates thinking and catalyses action.

Our inquiry:
the what and why ...

Why: the Forum's **Call to Action** identifies the need to develop and scale regenerative agriculture as a key element in a more resilient and sustainable food and agriculture system

What: used our unique convening power to gather macro-level insights and build understanding into what stakeholders believe it would take to achieve this in Europe and beyond

Context: regenerative agriculture may not be new... but level of interest is unprecedented

Rapid growth in number of companies in agri-food value chain making regenerative agriculture part of their sustainability and net-zero plans

Increasing number of farmers and land managers experimenting and participating in regenerative agriculture/carbon farming schemes

Leading Universities, Industry Platforms and NGOs undertaking research into regenerative agriculture and what it would take to scale

EU (& governments around the world) supporting regenerative agriculture as a pathway to sustainable agriculture and as a potential climate solution


FINANCIAL TIMES

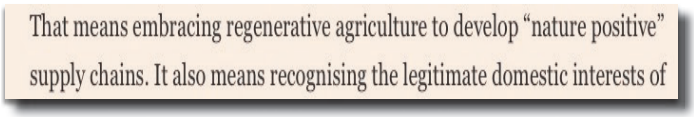
US COMPANIES TECH MARKETS CLIMATE OPINION WORK & CAREERS LIFE & ARTS HTSI

Opinion UK agriculture

The reinvention of farming has come too far to be threatened now

Government must realise that regenerative agriculture is here to stay

Sarah Langford, Author of *Rooted*


That means embracing regenerative agriculture to develop "nature positive" supply chains. It also means recognising the legitimate domestic interests of

Mark Schneider, CEO, Nestlé and
Alan Jope, former CEO, Unilever

Focus of our inquiry

- Is there a definition of regenerative agriculture?
- What are the benefits and costs?
- What are the barriers to adoption?
- What is needed to accelerate adoption?

Our approach

- Convene a series of workshops which focused on a deep-dive into the macro-level perspectives of key stakeholder groups
  - growers; agri-food value chain actors and policy-makers
- Supplemented with bilateral interviews with c. 50 Key Opinion Leaders (KOLs) and external research in Europe and United States
- Forum for Ag network consultation resulting in nearly 200 responses
- Draw on work done by others (e.g. SMI Agri-business Taskforce/Wageningen University, OP2B, SAI)

Starting point
The definition challenge

Stakeholders point to multiple definitions of regenerative agriculture...

"An adaptive farming approach applying practically proven and science-based practices, focused on soil and crop health aimed at yield resilience and a positive impact on carbon, water, and biodiversity."
The Case for Regenerative Agriculture in Germany and Beyond (BCG/ NABU: 2023)

"RegenAg is an approach to farming that uses soil conservation as the entry point to regenerate and contribute to multiple provisioning, regulating and supporting services, with the objective that this will enhance not only the environmental, but also the social and economic dimensions of sustainable food production."
Schreefel et al., 2020: used in Regenerative Agriculture in Europe (Wageningen: 2023)

OP2B/SAI PRINCIPLES OF REGENERATIVE AGRICULTURE

- Protecting and enhancing biodiversity at and around farms
- Improving or preserving carbon and water retention in the soil, leveraging the power of plants, livestock and agricultural practices
- Supporting the livelihoods of farm communities
- Enhancing the resilience of crops and nature, while decreasing pesticide and fertiliser usage (by optimising nitrogen use efficiency

... but perhaps with an emerging consensus on core practices...

Diversified crop rotations

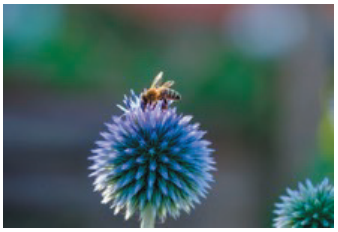
Cover crops

Minimum or reduced tillage

Reduced use of synthetic inputs

Integration of livestock

... and desirable outcomes



Biodiversity

Crop quality

Carbon capture & emissions reduction

Soil Health

Farmer profitability

Water quality

Open question: How to accurately and honestly measure and account for the impact in a holistic way?

Starting point
The definition challenge

Key definition insights…

- Absence of clear definition has both upsides and downsides
  - easy, flexible adoption which drives interest, enthusiasm and inclusivity
  - BUT – can create confusion, especially for growers, on what to aim at especially where there are different demands from downstream actors and…
  - potentially open to charges of ‘green-washing’
- Transition to regenerative agriculture needs to be inclusive of the field/farm and not just the individual crop
- Need for holistic and commonly agreed approach to measurement and verification of practice adoption and delivery of desired outcomes

There is one overall challenge …

… we transition the field not the crop:
an aligned farm level view is essential
rather than competing goals for individual crops

Inquiry insights
Grower & Land Managers

Key questions:
- What are the benefits and costs?
- What are the barriers to adoption?
- What would be needed to accelerate adoption?

Approach informed by:
- 1 x Workshop
- 10-15 interviews with growers in BE/FR/DE/UK/USA
- Engagement with EU/USA grower/commodity associations

	Insights	Commentary
Benefits & costs	✔ Improved soil health	General recognition that changing/adopting new regenerative agriculture practices would improve the health of soil (e.g. biodiversity, nutrients and water retention) and reduce erosion.
	✔ Resilience of crops	Increased crop resilience to extreme weather and improved quality would be a key benefit.
	✔ Potential increases in profitability and efficiency	Many farmers pointed to improved profitability and efficiency (e.g. reduced costs of tilling/inputs + savings on farm labor) although recognition that these would take time to be realized.
	?? Opportunity to monetize practice adoption/ demonstrable outcomes	Most farmers talked about opportunity to access new revenue streams such as carbon credits or to support for value chain 'Scope III' emission reduction claims as a key benefit but concern remains about the credibility of these schemes, their durability and where future liabilities reside.
	X Yield impact	Concern that changing/adopting new practices (e.g. reduced tillage) could have a short-term negative impact on yield and profitability, especially in the 3rd and 4th years of the transition, where impact on participation appears to be greatest.
	X Transition	Concern that adoption of new practices such as cover crops or use of specialist machinery/equipment would increase costs and that these are generally under-estimated.
Potential barriers	● Independent knowledge & advice	Clear need for farmers to have access to independent advice covering agronomics, farm economics, and how to engage in the multiple opportunities to capture additional revenue from public subsidy, to carbon credits and Scope 3 claims, to other eco-system service payments.
	● Access to the right machinery and innovation	Numerous examples provided of limited access to specialist machinery (e.g. light direct seed planters in Belgium) at an affordable price; need for continued access to existing technology or introduction of new innovation (e.g. weed control inputs to replace tillage/carbon fixing cover crops).
	● Absence of common metrics/alignment on desired outcomes	Some farmers point to the absence of common agreed metrics and alignment on desired outcomes sparking fears that the 'goalposts' could keep moving or off-takers/NGOs demanding different/ competing outcomes.
	● Skepticism about durability of new 'regen ag' linked revenue streams	General concern that the new revenue streams could/would be eroded or not prove durable/sustainable leaving farmers with ongoing costs which exceed any agronomic benefits.
	● Support for transition costs	Concern, particularly with the value chain commitments, that support for farmers is couched only in supporting the costs of transition and not those required for sustaining the regenerative agriculture approach; participation in CAP 'eco-schemes' also seen as cumbersome to engage with and limited ROI.
	● Trust in other actors (esp. Government and Value Chain)	General recognition that growers need support to make and sustain the transition to regenerative agriculture but clear scepticism that government or value chain actors would make the right enabling interventions and a fear that this will be 'done to growers rather than with them'.
	● Owner-operator vs tenant farmer	Concern raised about potential differences in interest/adoption between those who own (& operate) the land (where land is the capital) and those who are tenant farmers (who may be more motivated by short term economic imperatives); if true, in areas of high concentration of tenant farmers, this could be a significant barrier.

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Acceleration

Insights

- Need for common metrics/agreement on desired outcomes
- Alignment with agri-food value chain with longer-term supply contracts necessary for predictability
- Broad access to affordable equipment and innovation to support adoption of new practices
- Clarity/regulation of new revenue programs to ensure their value & sustainability; ensure administrative burden to access public financial support is as light as possible
- Access to independent advice and knowledge
- Well targeted public/government support programs to cover costs of transition/yield lag

> *"There are undoubted benefits from adoption of regenerative agriculture practices but there will need to be systematic alignment between all actors to achieve the scale required. Otherwise, it will be limited to growers who can afford to do it and are interested"*
>
> ***EU Land manager***

Inquiry insights
Agri-food value chain

Key questions:
- What are the benefits and costs?
- What are the barriers to adoption?
- What would be needed to accelerate adoption?

Approach informed by:
- 1 x Workshop
- Informal interviews with key actors
- Participation in other forums (e.g. OP2B, SMI etc.)

	Insights	Commentary
Benefits & costs	✔ Resilient and sustainable supply chain	General recognition that a changing climate and biodiversity loss represents a threat to to the resilience and sustainability of existing and future supply chains; adoption of regenerative agriculture practices increasingly seen as a way to mitigate threats and ensure future resilience and sustainability.
	✔ Contribution to 'net zero' plans & ESG targets	Multiple value chain players now making substantive commitments to develop and scale regenerative agriculture including Forum partners who are foremost amongst them; driven by opportunity to incorporate contribution of regenerative agriculture into 'net zero' plans and the meeting of ESG targets, which are increasingly linked to shareholder investment, regulatory pressure (esp. EU CSRD) and societal expectations & confidence.
	✔ Increased consumer engagement and brand affinity	Desire for brand differentiation and new ways to engage consumers could also be informing value chain interest in helping to catalyze adoption of regenerative agriculture practices; evidence increasingly suggests that up to 70% of consumers are prepared to pay a premium for sustainably sourced products[1] whilst 56% of CPG growth in the last 5 years could be attributed to products with ESG claims[2].
	?? Cost of transition	Questions/concerns about how to fund the cost of transition, especially in the absence of commonly agreed and credible 'outcome' based metrics and in addition, the availability of the right funding mechanisms; there is also a need to align on whether this is limited to just the transition rather than the ongoing maintenance of regenerative agriculture practices.
Potential barriers	● Alignment on common credible metrics	A key gap identified is the absence of commonly agreed credible metrics (which some believe need to be outcome based) that provides a clarity and confidence for growers and a robust base for investing in regenerative agriculture adoption (as part of value chain 'net zero' plans/ environmental reporting). Today, growers report concern that different off-takers often want slightly different things.
	● Absence of direct grower relationships	Value chain actors don't always have direct relationships with growers and, even where they do, there are often other off-takers in the crop rotation who may or may not be willing to also pay for the adoption of the regenerative agriculture practices; this could be acting as a potential barrier and whilst there are examples of this being overcome (e.g. direct sourcing contracts & alignment in the chain) closing the gap and joining up off-takers up at the field level could be key to achieving scale.
	● Provision of attractive economic incentives	A recognition that providing valuable and durable economic incentives to growers will be key to making and sustaining the transition, given the costs involved to the grower. Although the value chain has a role to play here – perhaps even the key one (if they want to 'own' the emission reduction/Scope III claim, for example) – there may be a combination of incentives which extend beyond the value chain to include discounted rates on financial loans and insurance premiums, public subsidies, and payments for eco-system services (such as carbon credits). The rules on how these different payments might interact with each other, without undermining the claim associated with them, will be key.
	● From pilot to scale	Many pilot examples, often large scale with significant financial support, but limited evidence that they all have a roadmap for moving from pilot to real scale, which is a key barrier to break through and dependent on other factors cited here.
	● Grower access to right technology/innovation	In common with growers, there is concern that even with the right metrics, relationships and incentives in place, it still may depend on access to the right technology and innovation (e.g. machinery/optimised carbon fixing cover crops) to support and sustain the transition to regenerative agriculture and the adoption of the most effective practices.

Inquiry insights
Agri-food value chain

Key questions:
- What are the benefits and costs?
- What are the barriers to adoption?
- What would be needed to accelerate adoption?

Approach informed by:
- 1 x Workshop
- Informal interviews with key actors
- Participation in other forums (e.g. OP2B, SMI etc.)

Acceleration

Insights

- Need for common metrics/agreement on desired outcomes
- Alignment within agri-food value chain to transition farm not field combining the various nodes of activity taking place (e.g. SAI, OP2B, SMI, Regen10)
- Provision of predictable and durable economic incentives underpinned with contractual agreements
- Knowledge transfer and peer to peer learning opportunities
- Enabling public policies from subsidy to infrastructure

> *"There are emerging proof points that demonstrate when economic incentives are aligned it is possible to scale the adoption of regenerative agriculture practices. Carbon farming credits and incentives for Scope III payments is probably where the market is... but we need to make this the norm rather than the exception"*
>
> ***Value chain actor***

Inquiry insights
Policy-makers and Key Opinion Leaders

Key questions:
- What are the benefits and costs?
- What are the barriers to adoption?
- What would be needed to accelerate adoption?

Approach informed by:
- 1 x Workshop with current and former policy-makers
- Informal interviews with 8 current and retired senior EU & Member State policy makers + 2 from USA

	Insights	Commentary
Benefits & costs	✔ An inclusive pathway to sustainable agriculture	A recognition of the potential for regenerative agriculture to offer a more inclusive pathway to improving the sustainability of agriculture in Europe beyond the organic model.
	✔ Opportunity to improve the health of EU Soils and unlock co-benefits	Several policy-makers suggested that improving soil health is/should be at the core of regenerative agriculture and argued that the extensive scientific evidence base for soil can inform the core metrics and enable progress to be measured; they also argued that improving soil health would unlock co-benefits for water and biodiversity... indeed, for them, improving soil health is the key 'unlocking' element.
	✔ Harness the potential of the land-use sector to achieve climate neutrality	Along with improvements in soil health, there was a recognition that the deployment of the approach could also provide a pathway to reducing emissions in the land sector and potentially sequestering carbon in agriculture soils thereby contributing to the achievement of the climate neutrality goal.
	✔ Creation of new durable private fiscal mechanisms	A clear interest to explore how to monetise the value created for the eco-systems through regenerative agriculture approaches. Although focused on payments for decarbonizing the value chain or carbon removal credits for use beyond the value chain, several argued for the broader application to water consumption (& quality) and eventually biodiversity; also, the data captured through such schemes could unlock access to preferential rates for farm loans, mortgages and insurance.
	✔ Enables contribution to multiple policy goals under EU Green Deal	The regenerative agriculture approach was identified by some as potentially the key that unlocks the delivery of multiple EU and National policy goals within the Green Deal framework (from Farm to Fork, Soil Health Directive, Nature Restoration Law and on).
	?? Cost of transition	Most policy-makers raised the cost of transition and need for a compelling business case to persuade farmers to make and sustain the transition; formal or informal public-private partnerships identified as a critical success factor.
Potential barriers	● Tendency to focus on legal definitions	Strong recommendation to avoid the temptation, however strong, to focus on a legal definitions. Whilst important for Directives and Regulations, participating policy-makers talked with relative consistency about the need to focus on outcomes.
	● Balance between enabling and disabling interventions	Key insight on need to ensure that policy interventions enable the adoption of regenerative agriculture, such as investment in required infrastructure such as soil monitoring or independent advice for growers, rather than measures that can disable, such as regulation that compels adoption of certain practices or prevents access to key tools required for regenerative agriculture; suggested impact assessment test for assessing whether interventions are enabling or disabling the seeding of regenerative agriculture.
	● Coherence of policies at EU/Member State level	Linked to the above, a need to ensure coherence between EU policies/ legislation/ regulation and between the EU and Member States.
	● Time lag on policy impact	Concern over time lag between policy conception and implementation, especially when requiring legislative approval or dependent on existing delivery mechanisms such as CAP, which can take several years to reach conclusion.
	● Forging public private partnerships	A recognition that public and private sectors have not always found it easy to work together, especially in agriculture, and that a mindset shift (on all sides) could be required to find creative way to bring the two together to maximise the impact of their actions (for example, managing alignment of public subsidies with market incentives for farmers).

Inquiry insights
Policy-makers and Key Opinion Leaders

Key questions:
- What are the benefits and costs?
- What are the barriers to adoption?
- What would be needed to accelerate adoption?

Approach informed by:
- 1 x Workshop with current and former policy-makers
- Informal interviews with 8 current and retired senior EU & Member State policy makers + 2 from USA

Acceleration

Insights

- Need for common metrics/agreement on desired outcomes & robust, credible methodologies for measurement (especially if leading to monetisation options)
- De-risk the transition – for growers and other actors such as financial lenders & insurers
- Support high quality thresholds for private market provision of ecosystem service incentives (Carbon, Water, Biodiversity credits)
- Development of independent, trusted repository of knowledge, data and best practices
- Investment/development of enabling infrastructure (e.g. Soil Monitoring/Rural Broadband)
- Create a filter to assess extent to which public policies are coherent and enable/support transition

> *"Development of coherent policies, independent repositories of information and advice and investment in public infrastructure could play an incredibly important role in accelerating the scaling of regenerative agriculture… but we need to focus on desired outcomes and impactful interventions that only we can provide and not get bogged down in legalistic definitions"*
>
> ***EU policy-maker***

Inquiry insights
Forum for Ag Network Consultation

Network consultation

Key multiple-choice + free text questions:

- What would make the biggest difference in developing & scaling regenerative agriculture?
- What would make the biggest difference to help farmer transition?
- What market incentives would make the biggest difference?

Approach

- Multiple choice/ free text survey
- Targeted at all stakeholders in Forum network
- +180 respondents; 75% EU-27 (RofW: India, Switzerland, U.K., USA, Ukraine)
- 30% farmers/ land-managers; 22% agri-food industry; small representation of NGOs/ Policy-Makers

1. In terms of definition and metrics, what would be most important?

- Almost **60%** said the most effective option would be clear metrics commonly agreed and followed by all stakeholders
- Another **34%** thought that a clear definition was more important
- Only **6%** believed that both clear metrics and a clear definition already exist

2. What would persuade farmers to transition to regenerative agriculture?

- The largest group – almost **36%** - chose targeted CAP subsidies as the most significant factor
- Just under **26%** thought access to affordable machinery, inputs and other technologies were important
- **21%** opted for expansion of advice and information to farmers

3. What market incentives would make the biggest difference?

- Around a quarter of respondents (**23%**) thought that premium prices for regenerative agriculture produce and crops would be the best market incentive
- Another quarter (almost **27%**) preferred payments for eco-system services
- Almost **47%** thought that none of the choices offered would be best option

4. Overall, what would make the biggest difference to success of regenerative agriculture?

"Financial benefits, profitability, and fair compensation"

"De-risk the transition"

"Digitization to document Regen Ag practices"

"Outcome-based programmes… avoid green-washing"

"Targeted advice, and better communication about Regen Ag"

Key takeaways

1 With improving soil health at its core, regenerative agriculture is broadly inclusive and has the potential to unlock a range of environmental sustainability and climate- related benefits whilst increasing long-term farm productivity

2 Strong scientific evidence base for soil health can and should be used to inform formulation of robust 'outcome-based' metrics for regenerative agriculture which will enable the tracking of progress and avoidance of 'green-washing' claims

i. independent verification of outcomes seen as a necessary backstop

3 A compelling economic case is vital to covering the costs and incentivising growers to make and sustain the transition

i. requires development of predictable and durable market-based revenue streams (the most likely of which are payments for decarbonizing the value chain (e.g. Scope III emission reductions and for carbon removal credits to be used beyond the value chain)

ii. public funding (e.g. through the CAP) should be simplified, to improve access and alleviate the administrative burden, and the value increased (to cover costs of transition and any 'yield drag')

iii. use of data generated by growers, through participation in market based or public subsidy schemes linked to improvements in soil health/regenerative agriculture could be used to unlock other financial benefits such as preferential rates for farm loans, mortgages and insurance

4 Policy interventions can and should be part of the equation, by helping to enable or de-risk the transition, particularly increasing access to information and advice, technology and innovation, rules for new market-based revenue streams and necessary infrastructure

i. coherence and consistency are critical and a 'filter' through which a policy can be assessed for its impact on enabling the goal of developing and scaling regenerative to be met would be a positive innovation

ii. policies assessed to have the greatest impact should be expedited to help achieve the goal quicker

5 Achieving the goal requires systematic alignment of knowledge sharing, innovation and technology, finance, and collaboration across the value chain with farmers and land managers, at the centre

i. need to combine the various nodes of activity on regenerative agriculture taking place across the value chain

Next steps

- ❑ Complement these findings with those from our cross-sector workshop on Funding and Financing the Transition
- ❑ Dialogue series on Regen Ag in run up to Annual Conference
- ❑ Include in the final report on the Call to Action

About the Forum for the Future of Agriculture

The Forum for the Future of Agriculture (ForumforAg) is the premiere meeting place in Brussels to debate sustainable agriculture and environmental challenges. The Forum is where agriculture and environment meet for an open dialogue at the Annual Conference and other events throughout the year.

The European Landowners' Organization and Syngenta came together in 2008 to create a new, open and inclusive place in Europe where all stakeholders interested in contributing to a more sustainable agriculture system could come together to debate and share knowledge and expertise on how this could be achieved. They remain committed to that goal and invited other organisations to join and help take forward the Forum for the Future of Agriculture on the next phase of its journey.

The strategic partners support the mission of the forum to contribute to the development of a more sustainable food and agriculture system. In doing so, they work together with the founding partners under the guidance of the Chairman to enable the strategic development of the Forum for the Future of Agriculture and help to shape its annual work program. The ForumforAg partners also act as a sounding board and provide counsel on our thought leadership activities and positions. The Partners also exchange knowledge and expertise on what works on the ground, as well as constructively challenging each other, as well as other stakeholders in their community, to help create a more sustainable food system.

Find out more at www.forumforag.com

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