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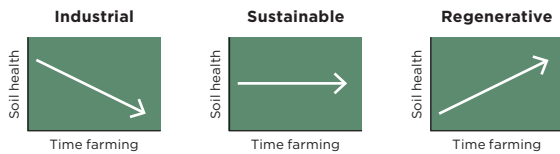
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**SPOTLIGHT**  
Savills Research

# Regenerative Agriculture

savills



Building resilience • Core principles • Increasing profitability



Regenerative agriculture is about repairing and improving soil health, rather than using or sustaining current management methods



Farming Photography

# What is regenerative agriculture?

The term may have only recently surfaced as a popular concept, but it is gaining traction as the key solution to feeding growing populations and tackling climate change

Regenerative practices have been a groundswell movement in agriculture. They have recently been increasing in popularity not only with farmers and land managers, but also with scientists, policy makers and the public. High-profile media attention and the ongoing debate around the role of ruminants on climate impact has championed the cause. This Spotlight on Regenerative Agriculture sets out the basics for those interested in exploring this movement, as well as pointing to some developments and new areas of interest.

### WHAT'S IN A NAME?

Defining regenerative agriculture is not simple. There is no one universally-agreed definition. In its broadest terms, regenerative agriculture refers to an approach that seeks to work with

natural systems to restore and enhance the biodiversity, soil fertility and ecosystem service provision (such as carbon sequestration and water retention) of farmed land.

Regenerative models focus on increasing the resilience of ecological systems, rather than extracting from these systems solely to achieve market returns. Regenerative agriculture not only focuses on the resilience of natural capital, but social capital too, with the goal of supporting rural communities and wider supply chains.

### BUILDING RESILIENCE

Central to the regenerative agriculture model is the concept of protecting and restoring soils. Over the last century, mechanisation, the increasing availability of pesticides and

fertilisers, mono-cropping and a concern about the need to feed the rapidly growing global population have all led to intensively farmed soils becoming depleted of their natural biology and fertility. The United Nation's 2020 report on the state of soil biodiversity concluded that the future of global soils looks bleak if current detrimental practices continue.

Regenerative agriculture aims to reverse the degradation of soils, focusing on rebuilding soil organic matter (SOM).

Minimising soil disturbance and building up soil organic matter fixes carbon within the soil. This occurs through the transformation of plant and animal detritus, as well as certain bacteria that can fix carbon by using atmospheric CO<sub>2</sub> as their energy source.

“Under regenerative models, as soils increase in fertility their water holding capacity also increases, thereby increasing the natural, biological productivity of the land and encouraging species growth”

Under regenerative models, as soils increase in fertility their water holding capacity also increases, thereby building the natural, biological productivity of the land and encouraging species growth.

On the other hand, if land is intensively cultivated, it releases carbon into the atmosphere and water run-off is more frequent. Regenerative agriculture is, therefore, being proposed as a key solution to feeding growing populations, while also tackling climate change and increasing environmental risk.

#### THE YIELD QUESTION

The pivotal question in the debate about regenerative agriculture is whether it can produce enough food. The Food, Farming and Countryside Commission 2021 report modelled the yield potential of a regenerative system and found that within this model the UK yield (of cereal crops) in tonnes per hectare was 27% less than within current conventional systems.

More modelling and information is needed to reach concrete conclusions. Sustaining high yields can be environmentally damaging however, so a key consideration is the improved long-term environmental resilience of regenerative models against the increasing environmental precarity of high yielding, intensive systems.

For many businesses, the financial impact of this drop in yield may prove a prohibitive barrier to this method of farming. However, the beauty of regenerative practices is they are not a binary choice. Unlike purely organic schemes, farmers can adopt practices to suit their soil types or individual enterprises. The diversity implicit within regenerative models enables production layering, for example through grazing animals on cover crops. And for some, the reduction in the use of artificial inputs means that these systems can be more profitable.

#### NO ONE-SIZE-FITS-ALL

Not all principles of regenerative agriculture will be applicable or suitable to every land type. For example, recent field-scale research from Agrii's Stow Longa Technology Centre demonstrated that although cover cropping is beneficial for managing lighter erosion-prone soils, for those on heavier land it is less successful.

Within the study, it was found that over six years, traditional cultivation techniques outperformed all other cover cropping treatments in terms of margin over costs. However, the study did demonstrate that SOM levels increased significantly more under the cover crop model, indicating

a long-term benefit to soil structure and biology. In conclusion, the recommendation was that cover cropping should be seen as part of integrated soil management, rather than the only applicable technique.

#### IS THIS NEW?

The term is only just becoming a mainstream concept, but producing food alongside nature's rhythms has always existed. Artificial inputs allowed the link to be weakened and nature to be managed in search of greater efficiencies. Ecologists and farmers such as Allan Savory and Richard Perkins have popularised regenerative agriculture in recent years, which has prompted public attention through movements such as Regenuary and the celebrated Netflix documentary *Kiss The Ground*. This is beginning to have an effect on supply chains, led by corporates such as Timberland and General Mills, which have made commitments to source materials from regenerative systems, supporting farmers to adopt new systems, upskill and scale up their enterprises.

#### REGENERATIVE THINKING

The concept of regenerative is not unique to agriculture. Regenerative capitalism, a concept coined by John Elkington, is gaining traction within businesses. It is intended to deliver “exponential progress in the form of economic, social, and environmental wealth creation”. Cynics may argue that regenerative thinking is just the next iteration in the box of sustainability jargon, however it is indicative of a realisation that society has reached an environmental tipping point, and if environmental risk is not addressed in a way that seeks to solve root causes, the future could be bleak.

#### Industrial vs Regenerative approach

— INDUSTRIALISED	+ REGENERATIVE
Disconnected	Interconnected
Extractive	Value added
Controls nature	Works with nature
Higher chemical input	Lower chemical inputs
Monoculture	Diversity
Carbon emissions	Carbon fixing

#### FIVE CORE PRINCIPLES OF REGENERATIVE AGRICULTURE



Minimise soil disturbance



Maximise species diversity



Keep the soil covered and build its organic matter



Maintain living roots all year round



Integrate livestock

#### WHERE DOES SUSTAINABILITY FIT IN?

There is often confusion over the difference between regenerative systems and sustainability. All regenerative models are sustainable however, not all sustainable action is regenerative. A regenerative system fixes the root cause of the problem and then renews its growth potential, whereas sustainability focuses on not letting the problem get any greater.



“Collaboration is essential and should involve a team with a broader range of skills and strong communication to ensure that it delivers for the farmer”

## Regenerative techniques: a glossary

Regenerative, agro-ecology, permaculture, holistic land management, the semantics of land management are ever changing. Below is a guide to the techniques a regenerative agricultural system might look to adopt:

TERM	DEFINITION	POSITIVES	NEGATIVES
<b>No-till/ minimum till</b>	Method of planting crops or pasture that involves very limited soil	Reduces soil erosion and SOM losses. Lower cost disturbance	Challenging on heavy soils and within rotations that include root crops
<b>Cover cropping</b>	Growing plant species secondary to the primary crops or pasture to ensure soil is covered year-round	Reduces soil erosion, can have nitrogen fixing capability, increases SOM and, in turn, water retention	Additional seed and establishment costs and dependency on mechanical or chemical destruction prior to next crop
<b>Integrated pest management</b>	Focuses on long-term prevention of pests or their damage via combinations of biological control, habitat manipulation, modification of cultural practices and use of resistant varieties	Reduces use of chemical pesticides, promotes thriving soil microbe populations and can lead to longer term cost savings by addressing the root of the problem	Potential yield reductions in early years, higher reliance/less flexibility on crop rotations
<b>Compost/ organic fertilisers</b>	Using organic or decomposed waste as a sustainable source of fertiliser	Improved nutrient cycling and reduced reliance on greenhouse gas intensive inputs	Can be inaccessible and/or costly to apply if brought into the farm system
<b>Livestock integration/ mob grazing</b>	Intermittent grazing of livestock at opportune times in the production cycle	Enables greater nutrient cycling, promotes plant growth and brings back natural balance to the ecosystem. Reduces feed costs, increases animal health and welfare	Infrastructure costs associated with grazing, time costs associated with frequent movements
<b>Agroforestry/ Silvopasture</b>	Growing trees together with a crop or grazing pasture	Carbon sequestration benefits biodiversity. Increases water and nutrient holding capacity of soil. Increases crop shade and reduces burning	Reduced farming area in the arable system. Need for smaller, specialist harvesting machinery. May cause moisture stress in some areas

### WHERE DO WE LEARN, HOW DO WE LEARN, WHAT DOES GOOD ADVICE LOOK LIKE?

A desire to improve soil health is a common trigger that leads to the adoption of regenerative agricultural practices on a farm. Soil type also determines the suitability of cover crop mixes and key machinery such as no-till drills, meaning that while a successful regenerative agriculture system has common principles, the best approach for a farm is scenario specific.

Visiting demonstration sites, tapping into the experience of others via YouTube videos and Twitter and connecting with mentors are often

important ingredients for success. The Agriculture and Horticulture Development Board has increased its focus on knowledge exchange, with many of its Monitor Farm demonstration sites exploring soil health issues, providing a forum for farmers to discuss the practicalities of integrating cover and catch crops and benefit from collective experience.

Events dedicated to regenerative agriculture, such as the Groundswell show and conference, have developed and play an important role in both demonstrating the technology and connecting farmers with each other and with advisors.

The advice farmers and land managers require to adopt a regenerative system, while minimising their financial risk, is much broader

than traditional agronomy and includes soil health, cultivation systems and the integration of livestock, in addition to pesticides and crop nutrition. Consequently, advice cannot be siloed into traditional roles such as agronomist and business consultant.

Collaboration is essential and should involve a team with a broader range of skills and strong communication to ensure that it delivers for the farmer. Advisory services have evolved in response, with agronomy firms developing soil health reporting services, while expanded input advisory services and product offerings now include catch and cover crop mixes, biostimulant seed treatments and foliar sprays.

Business consultants play

a key role in steering the business strategy, managing the transition of expectations with lenders and investors and integrating livestock and arable enterprises within a profitable system.

It is now more important than ever that advice looks beyond gross margins and considers the impact of the system on fixed costs and resource requirements within the context of a longer term vision.

**2.2m**  
tonnes of topsoil  
is eroded annually  
in the UK

**£73,460**

The average cost of a no-till drill, which can save time and money

**4-6%**

Target soil organic matter for soils within cropping systems receiving medium levels of rainfall (AHDB 2019)

# Soil quality in the tenanted sector – filling in the gaps?

It is in a landowner's interest to incentivise improvements in soil organic matter

Improving soil quality by rebuilding soil organic matter (SOM) levels directly benefits farmers, improving soils nutrient holding capacity, infiltration rate and working windows. However, as a natural process, positive management actions are not immediately followed by results. This lag could be particularly significant for decision-making on the 30% of the UK's agricultural land that is tenanted. If a tenant adopts regenerative agricultural practices, does tenancy law allow them to be rewarded for improving the quality of the land?

Tenants of Agricultural Holdings Act (AHA) and Farm Business Tenancies (FBT) can claim compensation for improvements from their landlords at the end of their tenancy term. The process for AHA end of tenancy compensation claims traditionally focused on the residual chemical nutrient value of bought-in inputs, but was widened in 2015 to incentivise tenants to farm sustainably. This allowed tenants to claim for improvements from the use of digestate and compost. However, the benefits from cover and catch crops still appear to fall outside the compensation provisions, suggesting it remains focused on nutrients

not SOM. AHA tenancies don't have a baseline against which to assess soil quality improvements and compensation is based on the value to the incoming tenant; there is no straightforward way to value the productivity benefits of soil organic matter.

When new tenancies are being created, the Agricultural Tenancies Act 1995 offers more flexibility for soil quality objectives and a management regime to be built within a FBT agreement. This could include comprehensive soil quality test results undertaken at tenancy commencement, a monitoring regime and reassessment protocol for the end of the agreement. The default position is that for routine improvements made in the normal course of farming the holding, the tenant is entitled to compensation equal to the improvement in the value of the holding.

**30%**  
of the UK's  
agricultural  
land is tenanted

This is a more generous position than under the AHA as it includes enhanced capital value, although the Act does allow a compensation limit to be set.

Logically, improving soil quality should also increase the value of land. However, within a given land grade or soil type, the farmland market does not currently exhibit meaningful price differentiation based on other soil quality criteria. This is because scarcity is a major driver in the market and outweighs factors such as SOM levels, which can be remedied in time.

Due to agricultural subsidy reform, we forecast that more farmland will be marketed for sale in the UK. If supply exceeds demand this could lead to greater differentiation in value based on properties such as SOM levels. Taking a long-term view, it is therefore in a landowner's interest to encourage the regeneration of the land they own. For existing tenancies, assessing soil quality and incentivising improvements via a private scheme could be one way for landlords to align the interests of both parties under clear objectives where the tenancy agreement does not.



**The benefits from cover and catch crops still appear to fall outside the compensation provisions**



96,293

mentions of #regenerativeagriculture  
on social media in the past year

£23/ha

cost saving for a tonne of no-till wheat  
compared to the average UK farm

# A regenerative vision at Knepp Castle Estate

Molly Biddell interviewed Russ Carrington, who is leading Knepp Castle Estate's new vision of a regenerative agricultural enterprise to sit alongside its rewilding venture

Knepp Castle Estate in Sussex may be best known for its rewilding success story, but it is also pioneering in adopting another vision. Around 150 hectares of the estate are in the process of being converted into a new regenerative agriculture enterprise. The venture will largely be grassland-based and, over time, it will integrate complementary livestock enterprises; starting with 100% pasture-fed beef cattle, followed by poultry and, as momentum builds, a micro dairy and pig enterprise. In preparation, fences, water supplies and tracks are being installed.

The project has three core aims. The first is to explore nature recovery on a landscape-scale by coordinating management practices between adjoining land parcels, working with neighbouring farmers and linking up patchworks of rewilded and agricultural land within the River Adur catchment. This landscape approach will benefit from collaboration through the local farmer facilitation group and is aiming to be aligned with the proposed third tier of the future Environmental Land Management (ELM) scheme.

The second aim is to investigate the ability of regenerative agriculture techniques to build natural capital by measuring changes taking place on the land over time. Key ecological indicators will be monitored at eight different locations across the new farm. These indicators are soil health (including soil carbon), flora and fauna (populations and species diversity) and water quality. Alongside this, a detailed habitat map will be created and a carbon account kept to record carbon sequestration, emissions and storage. The monitoring process, which will involve detailed on-the-ground assessments and testing, will be supported by additional scientific analysis.



The third aim is to supply nutritious, low-carbon, sustainable food through a planned Knepp farm shop and café. The farm shop will be a gateway to the estate and will sell meat from both the free-roaming animals within the rewilding project and produce from the regenerative farm. The meat sold from the regenerative system will be Organic and Pasture For Life Certified – Russ stresses the importance of communicating product provenance to society. There are also plans to create a market garden next to the farm shop to supply fruit and vegetables. Increasing public access and engagement through these

symbiotic enterprises is an important part of the estate's overall strategy, and the social impact will also be benchmarked.

Russ is transparent in explaining that, with declining Basic Payment Scheme (BPS) payments, the model relies on being able to tap into Countryside Stewardship and future ELM income or alternative private funding for ecosystem services, despite uncertainty around exactly how that might materialise.

Russ believes regenerative agriculture will be pivotal in the future of our food production. He explains that this is because the sum of regenerative agriculture is greater than the sum of its parts and the approach can not only heal earlier ecological damage, but also increase the land's overall fertility and productivity.

So why isn't everyone already on the regenerative journey? Russ believes that the main hurdles preventing farmers from adopting more regenerative practices are mind-set, a lack of certainty around future agricultural policy and the knowledge and skills gap that needs to be filled to promote regenerative models.

Russ Carrington is on Twitter @CiderRuss



**Key ecological indicators will be monitored at eight different locations across the new farm**

“Adopting a regenerative model takes time, it’s not an overnight system change, but it’s incredibly rewarding, and it’s the future of resilient farming”



## Prioritising soil health is the key to the future of farming

The result: more resilient crops that need fewer inputs

James Hopkinson is the founder of Cloud Farming, a farm management business that provides low cost and adaptable alternatives to conventional farming. Cloud Farming work with both James’ family farm Lindertis and Walker-Munro Farms. They work in partnership with Arable Ventures, who provide the technology, equipment and labour to the farming operations in Angus, Scotland.

With over 600 hectares of arable land, Walker-Munro Farms has been moving towards regenerative agriculture for the past four years. The soils on the farm range from light sandy loams to heavy silt and clay loams. Previously, the farming operations centred around conventional ploughing and power harrowing. But in 2017, the farm needed to cut its input costs in order to remain viable, and James became interested in the benefits that direct drilling and other regenerative methods could offer to the farm business. The farm moved away from full inversion tillage to non-inversion and shallow scratch tillage, cutting its fuel and labour costs. Moving to a regenerative model required some compromises – one of the biggest being not growing potatoes as deep cultivations do not fit with James’ no-till vision. The farm now grows winter wheat, spring barley, winter barley, oats, peas, linseed, beans and grass in a wide rotation.

For James, prioritising the soil is the

obvious way to approach farming. He keeps soil under stubble and grows cover crops, grazing them where suitable. He has conducted grazing trials on his winter cereals, which he hopes will allow him to cut back on chemical spend, while increasing soil fertility. Manure is put back on the land via a straw for muck exchange.

By focusing on plant health through an integrated pest management system, James hopes to continue to reduce the amount of nitrogen fertilisers, herbicides, fungicides and insecticides he needs to apply, understanding that soil health is paramount to a less reliant, more resilient crop. The farm is using gamma radiation mapping to better monitor and understand changes in soil health. Over the past four years, James has seen huge improvements in the soil structure and the switch to no-till and scratch tillage has not impacted his crop yields.

James loves the fact that there is no handbook for regenerative agriculture – for him it requires a change in mind set and drive. Learning from other farmers and farm visits have been important for him in his regenerative agriculture education. He explains adopting a regenerative model takes time, but it’s incredibly rewarding, and he believes it’s the future of resilient farming.

James Hopkinson is on Twitter @arableventures

## INCREASING PROFITABILITY AT GOWBARROW HALL FARM

Gowbarrow Hall Farm in the Lake District is run by the Beaumont family and has been farmed regeneratively for the past two years. Previously, it was a traditional upland sheep farm, but the family realised they were making very little profit from the conventional production system.

They sold the sheep and started building a herd of shorthorn cattle, rearing them on a 100% pasture-fed grazing system and keeping them outdoors all year round. There are now 50 head of cattle and the herd is expanding. Sam Beaumont explained that this new approach works really well with the land that they have, as they are able to mob graze the lower meadows during the summer and then send the cows up on to the top fells to roam extensively during the winter. This is inspired by the concept of Wilderculture, and creates a hybrid regenerative-rewilded model, which works within the natural perimeters of the landscape, making the most of its natural variety.

The greatest success of the farm’s transition has been the substantial reduction in input costs. The only external input for feed over the past year has been three bales of hay. They have removed overheads such as indoor housing and veterinary costs – the cows’ overall health has improved since being outdoors all year, with less cases of problems such as lice and calf pneumonia. The farm sells the beef at a premium price from the freezer direct to customers, with UK-wide delivery proving a great success during the Covid-19 pandemic.

Sam Beaumont explains that adopting this new system hasn’t increased productivity but has definitely increased their profitability. He recommends starting small and scaling up, saying “no one-size-fits-all” and that it is important to work out what will suit you and your land best.

Gowbarrow Hall Farm is on Twitter @gowbarrow



The farm sells the beef at a premium price from the freezer **direct to customers**, with UK-wide delivery



## 🌱 Regenerative agriculture centres around the concept of building system resilience in the face of increasing environmental risk 🌱



# Managing adoption risks

A slower transition with regenerative agricultural practices adopted incrementally allows farmers greater flexibility while they learn what best suits their farm

Regenerative agriculture involves lower cost practices such as no-till drilling and introduces new costs such as cover crops. In the early years of adoption, as farmers are learning what suits their farm and before soil health starts to improve, there is a risk that a farm's overall performance could be lower if yields are affected. A slower transition with regenerative agricultural practices adopted incrementally may be less risky, but would also delay the rate at which environmental benefits are realised. There are some parallels between this transition and the two-year organic conversion process that is supported via Countryside Stewardship options. However, the lack of an official certification means that the adoption of regenerative agriculture is unlikely to be supported in this way.

There may, however, be opportunities to use mainstream Countryside Stewardship options in England to help kickstart the process of soil recovery, providing both financial support for the land to be under a fodder crop, sown fallow or legume-rich sward for longer than would ordinarily be possible in an arable rotation.

One of the principles of regenerative agriculture is minimising soil disturbance, and the adoption of no-till drilling is often the end goal. But the journey to that goal may involve cultivations getting progressively shallower as soil health improves, meaning that the right drill at the start of the journey may not be the most suitable drill at the end of the journey. Top specification no-till drills can cost up

to double the price of an equivalent width cultivator drill and some no-till farmers argue that both a disc drill and a tine drill are needed to have the most suitable machine available for any given season. One way to manage adoption risk could be to initially rent or share a machine that can work with both cultivated land and no-till drilling, allowing a farmer flexibility according to what the soil will allow.

For pure arable farms, integrating livestock may be complex if the business does not have recent experience or infrastructure for managing a livestock enterprise. This could

be addressed through recruitment, however there are other options. B&B contract pig and calf rearing, overwintering sheep on cover crops and bringing third party graziers into the rotation, using grazing licences or joint ventures, could all be considered. Many arable farms historically were mixed and may have livestock buildings that can be returned to use. Alternatively, using bought-in manures, composts and digestates can offer a way to unlock some of the benefits of having livestock in the rotation while a livestock enterprise builds up.

## Environmental stewardship options that could support regenerative agriculture in England

STEWARDSHIP OPTION	£/HA PER YEAR	DURATION	MANAGEMENT
Brassica fodder crop (AB13)	100	Effectively one growing season if followed by a spring crop	Winter grazing. No herbicides or insecticides
Two-year sown legume fallow (AB15)	522	Two years then rotate	Cutting
Legume and herb-rich swards (GS4)	309	Five years	Grazing or cutting. Spot weed treatment. No inorganic nitrogen



10%

Of the UK's emissions are from agriculture

95

Pasture Fed Livestock Association accredited farms

474,000

Number of hectares of organic certified land in the UK

## Demonstrating the impact – the role of certification

Measuring and verifying outcomes is essential to access higher value markets

As regenerative agriculture relates to an overall approach rather than a strictly defined technique, certifying regenerative products and practices is not simple. It is important to be able to validate and accredit regenerative systems in order for producers to demonstrate their impact and communicate to consumers the additional value. Measuring and verifying outcomes also enables investors to understand what their return might be. Certification enables farmers marketing their own products to access higher value markets, increasing supply chain transparency and consumer trust.

There is no industry-agreed method for certifying regenerative products, but there are initiatives and process-specific accreditation schemes already in existence. Some schemes are international, others are national, but could be scaled up to become globally relevant in the future.

■ *Pasture for Life Accreditation* is based upon standards that certify 100% pasture-fed livestock and dairy animals. It has been developed by British farmers, who want

to promote the health, environmental and welfare benefits of pasture-based systems. It does not encompass all aspects of regenerative agriculture, but certifies a sellable product of the system.

■ *Regenerative Organic Certification* was established in the US in 2017 and incorporates other existing certifications to provide assurance for products that are organic and focus on the principles of soil health, animal welfare and social fairness.

■ *Certified Regenerative from A Greener World* is another certification scheme from the US that offers producers the ability to meet their own regenerative goals through an audited regenerative plan, without having to be certified organic.

■ The Savory Institute has developed an *Ecological Outcome Verification (EOV)* system, which is a practical soil and landscape assessment that tracks ecosystem service outcomes in regenerative grassland-based systems. Farms demonstrating positively trending outcomes in land regeneration

through EOV are entered into a “Verified Regenerative Supplier Roster”, from which participating buyers and consumers can access these products or services.

Whether to focus on verifying outcomes or processes is an ongoing debate and there is a fear that, with the arrival of many new schemes, the concept of regenerative agriculture itself becomes diluted. However, finding a way to quantify and prove the impact of regenerative systems remains essential. The recent arrival of regenerative agriculture investment funds in the UK, and the demands for accountability from institutional owners, banks and retailers to quantify and reduce their environmental risk exposure, should signal a move towards more consistent standards. Elements of carbon and water risk are likely to feature in all of them, based around global regulatory alignment on climate risk reporting. All farmers can make a start on the route to a regenerative future by baselining these elements – Savills Whole Estate Reporting is one method by which this can be achieved.

### POLICY SUPPORT

The agricultural sector is facing seismic policy shifts with the phasing out of BPS payments and a transition to new support schemes in England, Wales, Scotland and Northern Ireland. England is focusing future agricultural funding on ELM, which includes a sustainable farming incentive; similarly, Wales is promoting a sustainable land management policy. Full details have not yet been published, but both are likely to support a regenerative approach, such as cover cropping, promoting biodiversity and nutrient management.

The Environment Bill will introduce the Polluter Pays principle, which will incentivise farmers to increase the nutrient holding capacity of their soil, instead of risking penalties for leached nutrients and other forms of pollution. Nitrogen taxes may be considered here.

Alongside future agri-environmental policy is the broader aim of reaching net zero carbon emissions by 2050, which the UK is legally bound to achieve. There is no doubt that there will be increasing regulation and incentives for emissions reductions in the near future. With agriculture, forestry and land use responsible for 10% of emissions in the UK, the rural sector will face pressure to reduce this from investors, lenders and supply chains. At the same time, the sector is in a unique position to sequester carbon through land use management.

Clearly, regenerative agriculture, which increases carbon drawdown, has a part to play. Whether through woodland creation, or increasing SOM, land managers can sequester carbon for use as an internal offset to ensure that their systems are reaching net zero. Additionally, they can sell the sequestered carbon to corporates and investors looking



to offset their residual emissions. The ability to monetise carbon drawdown is already a reality for woodland creation through certification schemes such as the Woodland Carbon Code. However, monitoring and certifying it through soil organic matter increases is not easy as there is no standardised accreditation scheme for soil carbon. This needs to be solved if land managers are to be appropriately rewarded and incentivised to adopt practices that increase carbon sequestration within their soils.

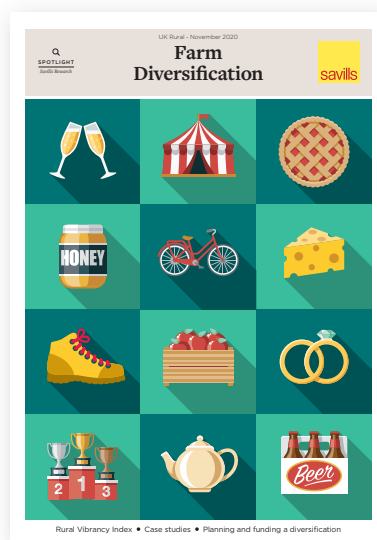
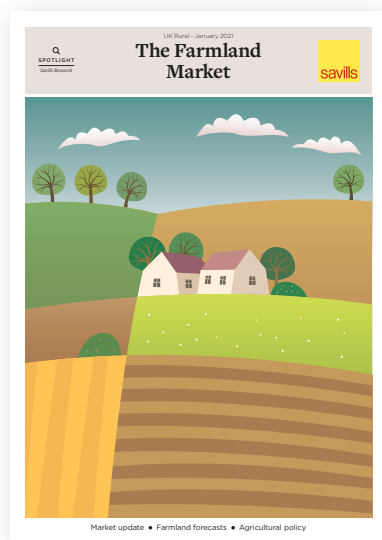
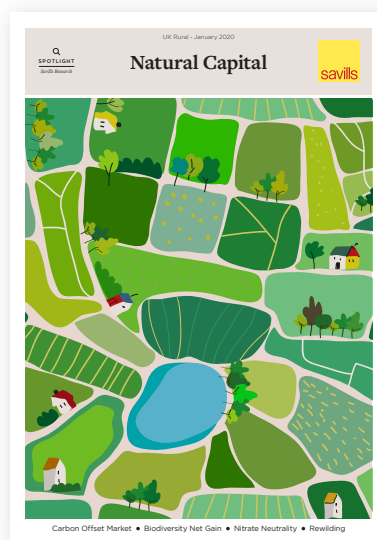
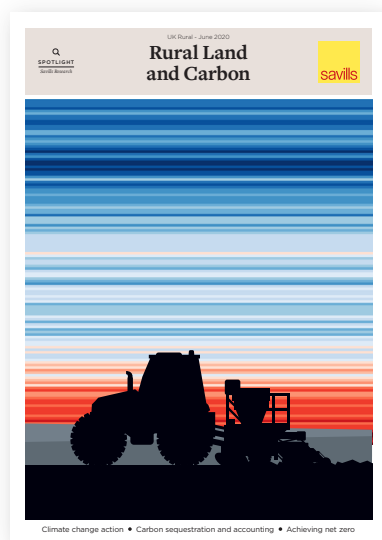
### NEXT STEPS?

Regenerative agriculture centres around the concept of building system resilience in the face of increasing environmental risk.

If businesses, policy-makers and the public agree that to address this increasing risk a whole systems shift is needed for food production, then regenerative agriculture is part of that solution. The upcoming National Food Strategy is expected to recommend policy that includes this.

Challenging conventional methods of farming should always be the aim of those optimising their farming assets. Looking to the future, there are significant opportunities arising around the possibilities of fusing a regenerative mindset with agritech advances. This would offer a hybrid future of effective and efficient technology working alongside natural biology. There are many ways in which this could be of benefit, for example in ecological monitoring and data collection.

For regenerative agriculture to be a truly investable paradigm shift, the industry needs to develop standardised approaches to quantification and accreditation. There is demand for systems resilience from supply chains and policy direction, but in order to optimise this momentum, regenerative agriculture needs to be able to measure and demonstrate its impact.



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