



# Agribusiness NEWS



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## News in brief

### COP26 and all eyes on Scotland

With the UK hosting the 26<sup>th</sup> United Nations Climate Change Conference of the Parties (COP26) in Glasgow from the 31<sup>st</sup> of October to the 12<sup>th</sup> of November 2021, COP 26 has found its way into our everyday vocabularies. Over the next fortnight, The 'COP', comprising of representatives of 197 countries will seek to continue to honour their 1992 objective of ultimately seeking to achieve "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system."

With all eyes on Scotland as host, all Scottish agricultural sectors have the opportunity to showcase their achievements to-date in seeking to cut emissions and to provide a discussion platform to develop new and practical approaches to tackle climate change, boost biodiversity, and support the production of high quality and sustainable food.

The Scottish Government has just announced an ambitious test and trial programme for Scottish farmers and crofters to tackle climate change. This will include financial support to carry out carbon audits and nutrient management plans. This will establish a clear baseline and options for action for all who participate. The results of this will inform a new programme of government support from 2025. This will reward farmers for improving the climate and biodiversity performance of their businesses.

As part of our COP26 special edition, this month we have two 'grass roots' guest articles: Nikki Yoxall & Johnnie Balfour take us on a principled journey into regenerative agriculture, and Alasdair Macnab offers ways to manage change and risk.

### Next month:

- Update on the NI Protocol
- New Agri-Environment Climate Scheme (AECS)

November 2021

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**This month's editor:**  
Christine Beaton



The European Agricultural Fund  
for Rural Development  
Europe investing in rural areas



Scottish Government  
Riaghaltas na h-Alba  
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# Policy Briefs

*The upcoming Conference of Parties (COP26) in Glasgow is expected to be a landmark summit, not least because of the 2020 hiatus, but because of the growing awareness and urgency of the climate and biodiversity emergencies declared around the world.*

*While agriculture is not a main item on the agenda, carbon finance and climate justice are, which will set a precedent for wider discussions around implications for farming and land use.*

*As importantly, the spotlight is on Scotland as hosts to be seen as setting an example; with all eyes on us, it is undeniable that COP26 is provoking huge amounts of discussion and activity in Scottish agriculture at the moment around carbon mitigation and future resilience.*

## Scotland's 'green, lean' Ag vision

The momentum has been picking up in the policy arena around what a sustainable and productive future for Scottish agriculture will look like that provides food, climate, and biodiversity outcomes.

Following the Suckler Beef report, produced last autumn, detailed practical actions for emissions mitigation, the initial sectoral reports from the Farmer Led Groups ([ABN, June 2021](#)), it is likely we will begin seeing a greater number of similar technical reports. This will be hugely important to begin mapping out emissions reduction potential in a real way on Scottish farms, identifying where gaps need addressing, whether financial or otherwise. SRUC modelling estimates that efficiency gains on farm may only reduce agricultural emissions by around a third; this means that identifying and facilitating currently non-economic mitigation actions is fundamental for reaching net zero by 2045, as per government targets. The newly established [Agriculture Reform Implementation Oversight Board \(ARIOB\)](#) will drive these action plans forward, with the ambition to develop an initial set of funded measures by COP26.

With the new SNP-Green coalition strengthening the government's environmental vision alongside the momentum of the Farmer Led Groups, ARIOB and COP26, the Scottish Agricultural Bill in 2022 is expected to provide a blueprint for the transition to farming centred around food, climate, and biodiversity benefits.

## Payment reform, with or without Brexit

While the UK is still developing policy going forward, the EU CAP policy reform includes 25% targeted towards environmental benefits and greater allocation for rural development and environmental compliance, covering biodiversity and climate goals. Going forward, EU policy will still be important in terms of ensuring compatibility of the UK's agri-food

environmental standards for trade with the EU through and beyond transition. It is also clear that cross-compliance is no longer sufficient for achieving the level of progress required, and more radical structures of funding will be needed to meet environmental targets going forward.

## What can we expect from COP and beyond?

With the impetus of COP26, it is likely that over the coming months we will hear announcements of a new set of pilot schemes. Beyond this, we can expect a more comprehensive and integrated system focused around facilitating actions with direct or indirect attribution to climate benefits established through research. This may focus on measures to improve productivity and efficiency of farms, as well as measures to reduce resource use initially.

More cutting-edge technologies or mechanisms may take longer to be incorporated into public schemes. e.g., where benefits are difficult to consistently and robustly assess impact. Scalable ways of measuring, monitoring, and reporting on biodiversity are in their infancy (e.g., sensor technology), so it is likely that these targets will become integrated with environmental goals in the longer term.

Baselining will be fundamental for monitoring progress and identifying strategies going forward, and a key action for farms who have not yet done it. Scotland is ahead of almost all other countries in this regard, with the Beef Efficiency Scheme running for several years, and FAS funded carbon audits.

Research & practitioners have been working to identify the 'win-wins' for both productivity (net cost savings) and climate benefits of on farm measures; it is hoped that new schemes, whether public or private, will begin to address the finance gap in net-cost mitigation measures for farmers, to facilitate further uptake beyond the cost threshold. Next steps will be to identify triple wins (for productivity, climate, and biodiversity), to enable best targeting of funding.

Carbon markets will also be a key topic of discussion at COP, and promote discussion across all sectors, including agriculture – a space to watch closely.

## FAS One-to-one Advice Grants

The deadline for FAS Integrated Land Management Plan, Carbon Audit and Specialist Advice grants has been extended to the end of March 2022. The scheme offers grant funding of up to £3,700 per business for tailored advice to help improve profitability and sustainability. Further information is available online at [www.fas.scot/advice-grants/](#)

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# Beef

## Beef trade

October has seen the prime beef price remain steady with R4L steers around 419p/kg, whilst it is reassuring that this price level seems to be stable, rising input costs continue to eat away at margins.

As we are now entering the Christmas buying period there is always an anticipation of a price rise as processors work to build stocks for a hopefully buoyant festive trade. Whether this will happen or not will depend on the availability of cattle/capacity.

The trade south of the border has been particularly strong in October with R4L steers 5p above the Scotch R4L price in the last week. This has been driven by a tightening of cattle numbers in England and the ongoing commitment from retailers to source British product, putting processors under pressure to fulfil their orders to these retailers.

Cull cows have dropped in price this month, with R grade cows around 300p – still not a bad trade for the time of year. However, with more numbers becoming available as we approach scanning and housing coupled with processors looking to kill more prime cattle in the run up to Christmas further price falls are anticipated.

Store cattle continue to be a good trade, perhaps not as strong as a month ago, where trade was exceptional. While many finishers will have filled sheds; others maybe questioning the economics of buying cattle due to rising input costs.

## New Zealand

As a country we need to question the UK Government's continued efforts to outsource its food production, with the announcement this week of an agreement in principle of a trade deal with New Zealand that would increase its tariff free access for beef exports to the UK from 454t to 12,000t in year one and to 60,000t by year fifteen. Whether New Zealand has the capacity to meet these new quotas whilst also meeting its emissions

targets remains to be seen. With increasing global freight congestion and surging shipping costs many exporting countries will be feeling the squeeze and will look to markets closer to home. For NZ that would be China who already accounts for 38% of NZ exports and who's beef consumption is expected to rise by 10% by 2025 will be more appealing to NZ exporters than the UK.

## COP 26

With COP26 underway in Glasgow, our thoughts must turn to the carbon footprint of the beef sector. Whilst, as a country, we have a carbon footprint that is less than half of the global average for beef production, there is still more we can do to reduce our emissions further to meet national targets and in doing so, improve overall business efficiency.

With the suckler cow accounting for 47% of emissions from the beef herd, anything that can be done to improve the efficiency of that cow will have a positive impact on emissions. BCMS Cattle Tracing Service (CTS) data shows that the average rearing percentage is 80% meaning that 20% of the cows on farm do not contribute anything to actual beef production but still emit methane and thus contribute to the total emissions.

Reducing these unproductive cows by better management (for example tackling their fertility problems and the reasons for these calf losses) would increase the number of calves born and reared leading to a reduction of emissions per kg of beef produced and an improvement in financial performance of the herd.

For a finishing enterprise, one of the keyways to reduce emissions is to reduce the age at slaughter, as the less days alive, the less methane emitted by the animal. By concentrating on improving growth rates and targeting younger cattle (as they are more efficient in terms of feed conversion) costs to the business can be saved as well as reducing emissions.

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**Scotland prime cattle prices (p/kg dwt)** (Source: drawn from AHDB and IAAS data)

R4L Steers (p/kg dwt)			-U4L Steers			Young Bulls -U3L		Cull cows	
	Change on week	Diff over North Eng.		Change on week	Diff over North Eng.		Diff over North Eng.	R4L	-O3L
419.7	-1.7	-2.4	420.9	-0.4	0.1	416.8	-0.6	330.5	292.4
419.1	-0.6	-2.7	420.6	-0.3	3.9	413.8	-5.1	326.6	294.2
419.7	0.6	-4.6	420.9	0.4	1.4	411.3	-10.0	320.4	291.4

# Sheep

## Free Trade

It has recently been announced, that the UK has an agreement in principle with New Zealand for free trade. Currently, there is a Tariff Rate Quota (TRQ) in place where NZ can import up to 114,000 tonnes of lamb to the UK on an annual basis. However, this new agreement "in principle" will increase this amount by 35,000 tonnes in the first five years, a further 50,000 tonnes for the following 10 years, before the removal of quotas meaning any volume of lamb could be imported to the UK from NZ. It is widely publicised that the two countries have different levels of bureaucracy, and farming methods, particularly influencing cost of production.

There are markets far closer to home, who have been more lucrative e.g., China and Japan. NZ has not been near to fulfilling their quota to the EU since 2011. In 2020, the amount of lamb imported from NZ was 39,900 tonnes. The total quota to the EU (including the UK) is 228,254 tonnes, of which the UK is the largest importer, but this UK importation was only 10% of the total lamb exported by NZ; demonstrating how small our market is for this large exporting country.

## UK Market Signals

The volume of lamb processed in the UK remains behind normal levels, and the price remains above the average, signalling a shortage of the product.

The deadweight SQQ for the week ending the 16<sup>th</sup> of December was 528.3p/kg (~£111/head) showing a slight rise on the week. Liveweight price for the week ending the 20<sup>th</sup> of October stood at an SQQ of 234.2p/kg.

Cull ewe sales have dipped, but the market is showing there is a shortage of ewes coming forward, and demand is strong, so I would anticipate this trade will increase going into the winter.

## COP26 – sheep industry

Livestock systems have received criticism of late on their environmental impact and production of greenhouse gases (GHG) such as methane, carbon dioxide and nitrous oxide. These GHG are produced through digestion, manure management, urine and dung and energy use to name a few. But livestock systems offer great benefits in carbon sequestration from grassland, hill land, hedges, etc. As well as offering environmental, conservation and social protection of the land and surrounding area.

We have a target to achieve net zero by 2050, some 29 years away, meaning the UK will not produce more GHG than it removes from the atmosphere. This in itself, offers a unique opportunity for the livestock sector to use efficiency and genetics to reduce gases such as methane. Meaning, that we have the ability to improve our margins through reducing waste in the system, while moving to achieve this target. Some systems will find this more of a challenge e.g., hill systems, but true use of the stratified system means we can maximise production of what the land is capable for.

Increasing technical efficiency and genetics in the flock can reduce the level of methane emitted per kg of lamb, this can be achieved through increasing ewe longevity, prolificacy, and fertility, increasing lamb growth rate through feeding for precision and increasing health, using more home-grown feeds, self-sufficiency, and integrating livestock with the environment around us.

We also have the opportunity to maximise the assets our land offers e.g., grassland, trees, and hedges, to both offer tailored nutrition and shelter, but also allow for sequestration, locking the carbon into our land resource.

Scotch lamb has the potential to be the most sustainable meat in the world, let's race to net zero and market our product at the premium it deserves!

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Week ending	GB deadweight (p/kg) 16.5 – 21.5kg					Scottish auction (p/kg)					Ewes (£/hd)	
	R3L	Change on week	Diff over R2	Diff over R3H	Med.	Change on week	Diff over stan.	Diff over heavy	All	All	Scottish	Eng&Wal
2-Oct-21	501.6	7.5	-4.4	1.8	232.80	16.1	3.7	0.8	70.68	70.97		
9-Oct-21	521.9	20.3	-7.2	1.2	234.80	2.0	7.0	3.6	70.45	72.14		
16-Oct-21	529.0	7.1	-3.7	3.1	237.60	2.8	10.7	4.9	63.28	68.92		

Deadweight prices may be provisional. Auction price reporting week is slightly different to the deadweight week. Source: AHDB and IAAS

Standard weight 32.1 - 39.0kg; Medium weight 39.1 - 45.5kg; Heavy 45.6 - 52.0kg

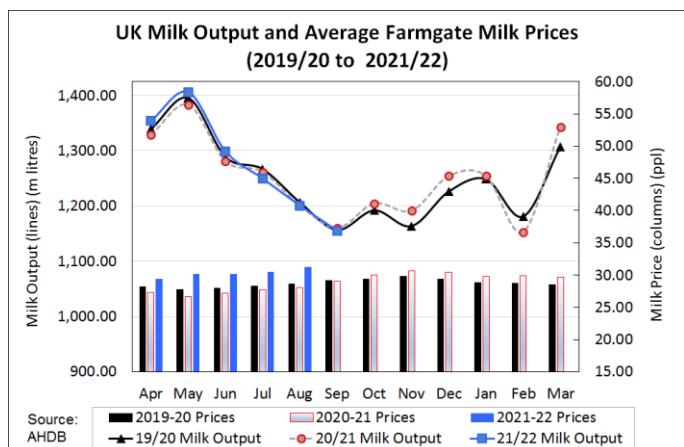
# Milk

## UK milk prices strengthen as costs soar

- Farmgate milk prices have risen recently but input costs are rising to a greater extent.

UK monthly milk output reduced during September on a year-on-year basis. Output for September 2021 has been estimated at 1,155.34m litres (before butterfat adjustment). This is 4.68m litres lower than September last year. Output for August 2021 has been revised upwards slightly by AHDB and currently stands at 1,200.66m litres (0.16m litres above August 2020 output). These latest figures mean that UK cumulative production to the end of September is estimated at 7,663.96m litres, up 49.20m litres on last year.

The UK average milk price increased by 0.76ppl between July and August 2021. The UK average milk price for August is estimated at 31.24ppl (up 3.19ppl on a year-on-year basis). Since April 2021, the monthly average UK milk price has been between 2.06ppl and 3.43ppl up on last year. Whilst price increases are welcome news, spiralling cost increases mean that most farm businesses need to take time to re-adjust and identify their new break-even point of production in a rapidly changing market.



## Farmgate price update: November 2021

Price announcements confirmed by UK milk buyers for November 2021 are shown below:

- Arla Foods amba – Arla has confirmed a 1.00-euro cent price increase from 1<sup>st</sup> November 2021. The manufacturing standard litre price increases by 0.90ppl to 33.52ppl, whilst the liquid standard litre price increases by 0.87ppl to 32.26ppl. Arla's organic milk prices for October hold over into November 2021.
- Co-op – Members of the Co-operative Dairy Group (CDG) will receive a 0.63ppl price increase from 1<sup>st</sup> November 2021 taking the liquid standard litre up from 31.45ppl to 32.08ppl.
- Tesco – Members of the Tesco Sustainable Dairy Group (TSDG) will receive a 0.70ppl price increase from 1<sup>st</sup> November 2021. This takes the liquid standard litre price for Müller supplies up to

33.36ppl, while Arla suppliers see their milk price rise by the same level to 33.11ppl

- Müller - Müller Direct suppliers will receive a 1.00ppl increase from 1<sup>st</sup> November 2021 taking the liquid standard litre up to 29.75ppl for Scottish suppliers.

## COP26 and the dairy sector

- Scottish Government has set challenging targets to reduce greenhouse gas (GHG) emissions. This includes a 75% reduction to emissions by 2030 and achieving net zero emissions by 2045.
- Targets for GHG reductions are set out in the Scottish Government's update to the Climate Change Plan. The plan reflects the commitments made by the UK signing up to the United Nations Framework Convention on Climate Change in 2015.
- Agriculture, and specifically the livestock sectors, will have a key role to play in helping to achieve the targets.

The United Nations Climate Change Conference (COP26) is now upon us, and agriculture will almost certainly be one of the key sectors to come under close scrutiny. In terms of its contribution to Scottish greenhouse gas emissions, Scottish Government data from 2018 indicates that agriculture is third on the list with around 7.5 MtCO<sub>2</sub>e (million tonnes CO<sub>2</sub> equivalents) behind transport (12.9MtCO<sub>2</sub>e) and business (8.4MtCO<sub>2</sub>e).

Like other livestock sectors, dairy farming produces significant quantities of methane (CH<sub>4</sub>), and this raises questions with respect to what can be done to mitigate the production of methane by dairy cattle. Many of these questions have been considered at length by the Scottish Government's farmer led groups. To read a copy of the dairy sector Climate Change Group Report, please follow this link: [www.gov.scot/publications/dairy-sector-climate-change-group-report-2/documents/](http://www.gov.scot/publications/dairy-sector-climate-change-group-report-2/documents/) In order for Scotland to stay on track to achieve the targets set out in the Climate Change Plan, total emissions from agriculture need to reduce from the 7.5 MtCO<sub>2</sub>e recorded in 2018 to 5.3 MtCO<sub>2</sub>e by 2032, a reduction of 29%. In 2018, it was estimated that dairy cattle contributed 1.17 MtCO<sub>2</sub>e (16%) of agricultural emissions in Scotland.

Since 2008, UK milk processors have been working along with farmers to achieve targets developed in the Dairy Road Map ([www.dairyuk.org/publications/the-dairy-roadmap/](http://www.dairyuk.org/publications/the-dairy-roadmap/)). The British dairy sector has already reported a marked improvement in its environmental footprint, reducing the emissions of GHGs (-24%\*), wastes, and other pollutants (ammonia -19%\*) whilst also improving the efficiency with which water, energy and other resources are consumed. \* between 1990 & 2015

Undoubtedly much has been achieved by the dairy sector already, but further evolution will be required if climate targets are to be met.

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# Cereals

## High prices, high stakes

Global grain markets continue to strengthen as demand rebound as economies emerge from lockdown and meet a range of crop problems. Layered on top of this is the effect of sky-high energy prices which not only boost the value of grain and oilseeds in bio-energy but also bump up the cost of key inputs; fuel and fertiliser.

In the UK, the grain industry is also being affected by the same shortfall in HGV drivers as the wider economy which makes transporting UK grain long distances particularly challenging for buyers. This in turn is expected to lead to higher grain imports than would have been expected previously as port-side mills turn to imported supplies.

## UK balance sheets stay tight

AHDB have released their S&D estimates for the 2021/22 season. A much better UK wheat crop has boosted local availability and improved price competitiveness in contrast to very high costs for imported grain particularly maize. This supports a sharp rise in domestic usage led by higher feed and industrial use (milling, ethanol, distilling). Imports however are expected to stay quite high as higher road haulage costs / lack of drivers encourage grain imports to port-side mills.

Barley supply has really tightened up in 2021 due to the small UK crop. At the same time domestic demand is expected to slip as the price discount to wheat narrows. This should keep export volumes up but this barley should find a ready market given the currently high cost of world feed grains on export markets.

### UK cereal balance sheets

	Wheat		Barley	
	'000 t 20/21	'000 t 21/22	'000 t 20/21	'000 t 21/22
Open Stock	2,438	1,416	1,357	1,058
Crop	9,658	14,022	8,117	7,108
Imports	2,431	1,700	88	70
Available	14,527	17,139	9,562	8,236
Seed etc	277	277	185	185
Domestic Use	12,911	14,745	5,307	4,114
Exports	209	594	1,290	1,000
End Stocks	1,416	1,800	1,058	1,046

Source: AHDB, DEFRA

as the price discount to wheat narrows. This should keep export volumes up but this barley should find a ready market given the currently high cost of world feed grains on export markets.

## Make the welcoming dram a low carbon one!

While delegates at COP26 will be involved in the serious business of finding agreement on lowering carbon emissions they will no doubt need to relax too and what better way than a dram of Scotch whisky!

The question is – how far has the Scotch whisky industry gone in reducing the carbon footprint of whisky? And what role can farmers play now and in the future?

Firstly, where do the carbon emissions in

producing whisky from? An assessment by SAC Consulting determined that 63% of carbon emissions in malt whisky production come from energy use in the process; malting, distilling, feed processing and transport while the production of barley on farm represents the remaining 37%.

The Scotch Whisky Association and its member companies have developed sustainability programme and targets in recent years and reductions have been achieved through energy efficiency and renewable energy adoption. Their latest plan is for all their members to reach net zero carbon in from their own activities by 2040.

On the farm, data from SAC's AgreCalc carbon web tool shows that the top 25% of spring malting barley producers are achieving carbon emissions per tonne 47% below the average through; higher yields and lower fuel and fertiliser use. A whole range of mitigation measures offer the potential to reduce average emissions even further. The key issue is how farmers will be rewarded going forward for their essential role in making whisky a low carbon tipple.

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£ per tonne	Basis	Nov '21	Jan '22	Mar '22	May '22	Nov '22
Wheat	Ex farm Scotland	206	209	211	213	178
Feed barley	Ex farm Scotland	178	181	183		158
Malt. barley -distill	Ex farm Scotland					215
Malt. barley -brew	Ex farm England#	240		250		
Oilseed rape*~	Delivered Dundee	566				450

# Grassland

## Grazing and Climate Change

If we were to increase our soil carbon in the [top 30cm globally by just 0.4%, we could offset a year's worth of greenhouse gas emissions.](#)

The potential of our soils to help in our climate change battle is great. However, claims when it comes to certain grazing methods and the soil carbon sequestration potential remain unsubstantiated.

Allan Savory is a great proponent of mob grazing or holistic grazing. His infamous [TED talk](#) discusses how this grazing can reverse climate change. Although this was published in 2013, the science does not support this. Why? He claims that the holistic grazing principles are adaptive to the growing conditions and therefore challenging to replicate in science. This does not mean there is no merit here, however.

## Grazing Management

When it comes to grazing, the science to-date suggests that heavy grazing is detrimental to soil carbon. This is global research and does not differentiate between different grazing methods.

When we look at temperate regions in specific, this still holds true – the heavier the stocking rate, the greater the soil carbon loss (Abdalla *et al.*, 2018).



## Grazing Systems

Looking at grazing systems, in particular, there are a few research projects in the UK which are starting to measure differences.

### Cell Grazing

Work at Rothamsted indicating that cell grazing (rotational grazing with daily shifts and around three-week rest period during the growing season) is leading to greater soil organic matter accumulation, thereby inferring greater carbon sequestration, than set stocking. This work is yet to be published but was presented during the Graze Debate 2 earlier this year, recording available [here](#).

### Mob Grazing

ADAS are leading on a Defra-funded mob grazing research project, and I am completing a PhD on this topic looking at different grazing approaches on three Scottish farms. The research is getting there, but soil carbon takes time. Ten years is seen as the standard to definitively measure soil carbon change as it can vary greatly from year-to-year.

### Managing Carbon

What we do know is that grassland holds more carbon than arable land, therefore livestock are often sitting on important carbon stores that we should protect. Over-grazing and soil erosion are practises that will lead to carbon loss and we should seek to avoid this.

### Soil Carbon Accumulation

Multispecies swards and practises that promote pasture productivity (liming, reseeding, fertiliser) favour soil carbon accumulation (Conant *et al.*, 2017), although we cannot ignore the other greenhouse gases that may arise from some practises that may offset any additional soil carbon stored (e.g., fertiliser production incurs high carbon dioxide emissions).

### Understanding the processes is key

We need to understand the process of topsoil accumulation in response to different grazing methods as farmers claim to observe this in practise but methods to measure this scientifically are lacking.

In addition, we must acknowledge that the ability of soil to increase carbon concentration reduces as we reach greater carbon concentration i.e., the soils become saturated. Therefore, there is more opportunity to store more carbon in soils with low carbon baselines. This suggests the potential for grazing livestock to help restore degraded soils through grassland, although determining the best method of grazing requires further research.

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# Management Matters

## A system of principles, not practices.

Regenerative Agriculture proposes farming with a set of principles, rather than prescriptive practices. Most regenerative farmers would agree that there are five principles which lead to healthy soil, functioning ecosystems and a reduction in inputs, and these guide our decision making.

### Regenerative Agriculture Principles

1. Increase biodiversity
2. Reduce soil disturbance
3. Maintain soil cover
4. Keep living roots in the soil
5. Integrate grazing animals into the farmed landscape

Increasing diversity, both in terms of the managed plant species we are growing either in our arable systems or in grazing pastures develop resilience and contribute to soil health (Degani et al, 2019). Nature is an abundant polyculture, so mimicking this by incorporating more species, we can develop healthier landscapes. Increasing space for wildlife, adding margins to arable fields and planting trees either on the edges or in-field as part of an agroforestry plan can reduce some inputs and increase profit margins, as well as capturing and holding water, nutrients, and carbon.

The principle of reducing soil disturbance is often reflected through implementing min or zero till practices. These can help to maintain higher levels of soil organic carbon (SOC) and microbial biomass content (Sun et al., 2011) which are not only relevant in terms of greenhouse gas emissions but can lead to increased biological activity and improved water infiltration (Blanco-Canqui et al., 2013) which will become more important in a changing climate. There are several farmers in Scotland, particularly through the SAC [Farming for a Better Climate Soil Regenerative Agriculture Group](#), with both trial and well-established reduced tillage systems who are finding profitability and soil health gains through changing their approach.

Maintaining soil cover can be achieved by using living mulches, cover crops and taller swards in pastures, all of which aid photosynthesis – the engine behind carbon sequestration and soil health. Combined with zero till practices into stubbles or broadcasting into standing crops there is potential for more resilient food production systems. The James Hutton Institute recently released a soil erosion app to help map soil loss across Scotland. Covering the soil, with a living mulch or residues can significantly reduce losses through wind and rain (Edwards et al.,

2000), not only keeping valuable soil on farm, but also reducing nutrient leaching and water quality issues.

Living roots in the soil ensure that nutrient exchange via root exudates is happening throughout the year, enabling a 'living soil' at all times (Cheng and Coleman, 1990). By maintaining life processes, we reduce shocks to the system, meaning soils can be optimised rather than being in recovery from disruption such as total inversion through ploughing.

Regenerative livestock management is often characterised by integrating livestock into arable systems, contributing to nutrient use efficiency (Watson et al, 2005). As well as contributing to fertility building, this approach helps to "stack enterprises" where land is used for multiple outputs building diversity (and therefore resilience) into the business.

### Regenerative Grazing

Regenerative livestock farmers working in pasture-based systems, rather than on mixed farms, often make use of mob grazing or other rotational practices in working towards regenerative principles. Both anecdotal reports and early research outcomes from Rothamsted Research suggest mob grazing can extend the grazing season, thereby reducing wintering costs and can lead to improved productivity per hectare when compared to a set stocked system. The key component of most regenerative grazing systems is rest – adapting management of the grazed area to enable recovery across the rest of the platform. This reduces risks of overgrazing, maintaining active photosynthesis and soil biological health.

## It's the journey, not the destination.

There may be times during the regenerative journey of each farm when practices not obviously aligned with "regen ag" are used. Regenerative agriculture is about shifting our mindset to one where we actively reflect on the principles and make informed decisions to take us in the right direction. Data collection and monitoring with responsive management is key. Wherever we are in our journey, reducing our costs and developing resilient systems that are not only adapted to a changing climate, but help mitigate further warming will become more important as we face volatile markets and various shocks to the system.

Being adaptive and willing to try different ways of working, ideally with support from enthusiastic peers will help all of us enjoy what we do whilst being productive and profitable.

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# Sector Focus - Forestry

## Timber and Trees - A Rapid Growth Sector

As the global media turns its' focus to the upcoming United Nations' COP26 Conference in Glasgow, trees and timber are increasingly hitting the headlines.

### Natural Carbon Sponges

Timber and trees have a crucial part to play in the fight against climate change. Whilst much of the COP26 Conference will concentrate (hopefully) on agreeing further reductions of CO2 emissions across the globe, the harsh reality remains that almost all operations will involve unavoidable emissions at some stage in their life cycle. As such, countries, companies, and individuals are searching for "carbon capture technologies", with the most viable of these being trees - natural 'carbon sponges' that also offer a hugely diverse range of additional benefits such as biodiversity improvements, shelter for livestock, flood prevention, and many more benefits.

Tree planting incentives remain in place in the form of grant funding from Scottish and UK Governments, with significant planting targets set by policymakers.

In 2021, Scotland delivered 10,660 hectares of woodland creation, around 89% of the overall 12,000 hectare target despite the challenges of a global pandemic and Brexit.



### Selling and using carbon units

Interest in woodland creation has also been driven by the rapid acceleration of the voluntary carbon market, with landowners being able to generate significant income by leasing the carbon capture ability of the trees in their new woodland creation projects.

The UK Woodland Carbon Code (the UK's quality assurance standard for UK woodland creation projects in the UK and generates independently verified carbon units) has seen monumental growth in the past financial year, with over 44,696 hectares

of new woodlands registered on the UK Land Carbon Registry as capturing carbon.

### An increasing demand for timber

In addition to the incredible appetite for woodland creation that seems to be growing ever larger, we also find ourselves in a market where global supply chains are strained to breaking point - this includes the timber market.

The UK is the second largest net importer of timber in the world behind China, and as many construction projects attempt to diversify away from steel and concrete (materials with huge CO2 footprints) and move towards "green" construction materials such as timber, demand for commercially grown timber will continue to rise - along with prices paid for timber that continues to be in such short supply within the UK.



### Key Positives for the Forestry Sector

- Scotland continues to deliver the bulk of new tree planting, with 80% of new woodland creation occurring in Scotland.
- Last year, Scotland planted 10,660 hectares of new woodland - the equivalent of over 21 million new trees planted.
- Support for woodland creation remains strong, with ambitious woodland creation targets set of 18,000 hectares to be planted a year by 2024/25.
- In the Autumn Budget, Rishi Sunak announced an extra £625 million of funding for tree planting and peat restoration.
- The UK Land Carbon Registry now holds over 1,176 registered projects, predicted to capture 15.4 million tCO2e from the atmosphere over their combined project lifetimes.

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# Management Matters

## Managing Change

Change is all around us. Climate, input costs, sale values, labour supply are some of the headlines. Each brings its own challenges and the need to make some tough decisions. How can you make a sensible decision in today's changing world.

There are various methods from taking a chance to a detailed analysis. One approach which, although a bit laborious, is certain - identify a sound next step for your business. This article describes a process which identifies the risks associated with any proposal and sets out a way to manage the identified risks.

First prepare a process map of what you are planning e.g., growing a new crop. Next identify as many of the risks as you can using the PESTLEO framework (see Table1). This method ensures you have little chance of missing anything important. The framework covers the areas which can impact your business or proposal.

**Table 1 PESTLEO Framework**

<b>Political</b>	Issues outside your control e.g., planning
<b>Economic</b>	How do the costs stack up? Cashflow etc.
<b>Social</b>	Is anyone else affected or to be notified?
<b>Technical</b>	What is involved, machinery, inputs etc?
<b>Legal</b>	Any constraints, contracts, advice?
<b>Environmental</b>	Consider compliance and safety issues.
<b>Organisational</b>	How will it affect my business?

These categories can also be classed as high or low. Classify each risk using the matrix in Table 2. This will guide your risk management strategy.

**Table 2 – Managing Risk**

RISK TYPE	High likelihood	Low likelihood	
<b>High impact</b>	HH - Deal with these yourself	HL	- Insure these risks
<b>Low impact</b>	LH - Use a contractor or self	LL	- Don't worry about these

At the end of this process, you will have a clear idea of what is involved, who is involved, who takes on what role and a list of the risks and who is responsible for managing them. This process can be used for any project or development in your business. It should make the process of dealing with change easier to manage and anticipate where it could go wrong.

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**Key Economic Data**

General Indicators	Price indices for August 2021 (Defra 2015 = 100)			
	Output Prices		Input Prices	
Base interest rate	0.1% (0.75% Mar '20)	Wheat	153.5	Seeds (all)
ECB interest rate	0.00% (0.00% Sep '18)	Barley	149.5	Energy
UK (CPI) inflation rate	3.1% Oct 21 (target 2%)	Oats	125.5	Fertiliser
UK GDP growth rate	Forecast 1.5% (Q3 '21)	Potatoes	138.2	Agro-chemicals (all)
FTSE 100	7,271.64 (27 Oct 21)	Cattle and Calves	124.4	Feedstuffs
		Pigs	121.0	Machinery R&M
		Sheep and Lambs	137.3	Building R&M
		Milk	127.6	Veterinary services
				116.0

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