July 2023

Soil Health Industry Platform (SHIP)
Technical Regenerative Agriculture Workshop
July Meeting Summary

Introduction

On 4th July 2023, the Sustainable Soils Alliance (SSA) hosted the 3rd Soil Health Industry Platform (SHIP) meeting of the year, which took the form of a technical workshop focusing on regenerative agriculture. The meeting was attended by representatives of four members of the Platform: Arla, Nestlé, Waitrose, and Yeo Valley.

Guest organisations including the Allerton Project, WWF, 3Keel, Nature Friendly Farming Network (NFFN), Dairy UK, Carlesburg, Co-op, Agricarbon, and academics from James Hutton Institute and University of Leeds were also present.

The following is a summary, under Chatham House rules, of the discussions during the meeting.

Ongoing Regenerative Projects

Nestlé shared their experience in paving the way towards a regenerative future through their arable supply.

Global targets:

- Nestlé has committed to a Net Zero Roadmap: 20% emissions reduction by 2025 which goes up to 50% by 2030.
- They are a heavily scope 3-centric business because of their reliance on agricultural commodities to produce products. Hence, parallel to this Net Zero commitment, they have targets around sourcing key ingredients through regenerative agriculture methods: 50% by 2030.
- This is challenging when there is no definition, but a good indication of the business making bold statements and owning this throughout its supply chain.
- Nestlé has 65 million tonnes of emissions coming from ingredient sourcing (70%), so need to make sure they get momentum before 2030.
    - Dairy is 34 million tonnes of emissions – largest contributor.
    - Soil and forest (which includes cocoa, coffee and cereals) is 25 million tonnes of emissions.
- They have a regenerative statement (rather than definition) in their agriculture framework which considers regenerative agriculture as a system to conserve and restore farmland, ecosystems, key resources (soil, water, biodiversity), and delivers benefits to farmers, the environment and society as a whole.
- Farmers are at the centre of all of Nestlé's regenerative programs (dairy, arable, coffee, cocoa etc.).
- Regenerative practices include:
    - Preventing deforestation.
    - On farm agroforestry - not much in the UK but this is something that came up at Groundswell and could be a next big step i.e. how to incentivize agroforestry and silvopasture to scale it up?

    - Reduced cultivations, cover crops, livestock integration, incentivising farmers to grow grain legumes etc.

UK specific work:

- Nestlé's Landscape Enterprise Networks (LENs) target cereal grains and will soon include sugar beets.
- The LENs model develops a marketplace in a region, to get all beneficiaries in the landscape to pull their funding and develop shared solutions with farmers to have a positive impact on the environment and support prosperous communities.
- The largest LENs is in the East of England – funded by Nestlé, water companies, Cargill and a local authority.
- Funding:
    - Regenerative agriculture has multiple benefits – from biodiversity to flood management – so there are opportunities for businesses to share costs and risks as many will benefit.
    - Not all funders are interested in a commodity. For example, water companies will see an economic benefit in reducing water treatment at their extraction points and in groundwater.
    - Payments made are separate for goods and services to ensure stakeholders other than food and drink businesses can fund.
    - Each LENs is truly place-based, and participating organisations must have a presence or dependency on the landscape – to avoid organisations coming in from an offsetting perspective.
- Guidance:
    - LENs have an aggregation point to convene farmers and land managers. At the moment these tend to be grain merchants, but could also be a local NGO, CIC, community group or a farm cluster.
    - A practical guidance document highlights specific practices that will be funded, but Nestlé is keen to be flexible to allow farmers and land managers to propose their own ideas – anything considered a risk for farmers to take on alone and which needs more funding to get going.
    - They also do not prescribe any costs to keep an open conversation about the value of a particular proposal.
- Evidence base/MRV: Currently revising MRV packages, running two trials in the east of England and working with Trinity Ag and the Soil Association Exchange.
- Scale: 2021-2023 has seen an annual doubling in the number of farms and hectares, proposals and funding. The geographical scale is also expanding. There is a desire to expand this to encompass all farmers and expand in central and eastern Europe.
- Government support: LENs has a good amount of support from Defra, who are trying to see what businesses can do to complement the Sustainable Farming Incentive (SFI).
- Next steps:
    - These are still early days – learning everyday to improve the Network.
    - Working on MRV. This is multi-faceted and not straight forward. But they are working on tangible targets in the short and medium term in the meantime. The MRV package will also look at farmer transitions - what they need to get to where.
    - There are opportunities for new businesses who are interested in this to get involved – with more businesses engaging the programme becomes even more cost effective, and offers great opportunities for farmers to engage.

The Allerton Project highlighted their various workstrands and partnerships with businesses aimed at providing research and education around sustainable farming.

- The Allerton project runs research and a demonstration farm in Leicestershire with the aim of providing research and education around sustainable farming. Their ethos is being a working platform for regenerative farming.
- They farm the land commercially and carry out different research projects to understand the interactions between wildlife and commercial farming.
- They also provide training for farmers and sometimes open their ground to policy makers and the general public.
- One of challenges in regenerative farming is understanding why it works when it works or why it doesn't work – i.e. one challenge they faced was having heavy soils on their farm.

Live projects:

- Conservation Agriculture Trial:
    - Working with Syngenta, looking at 3 different tillage practices within 6 filed: direct drill, minimum tillage and a plough based system.
    - Evidence/metrics: Tracking what effect this has on a number of indicators, both environmental and economic: birds, carbon footprint, GHG emissions, yield etc.
    - Looking at a further four years at tillage and novel techniques.
- Climate Neutral Farms:
    - Working with Nestlé on an EU Horizon 2020 project to reach climate resilient farmers.
    - The Allerton Project is leading the eastern UK network – working with 10 commercial arable farmers.
    - Evidence/metrics: 3 year program of baselining, benchmarking, monitoring, and training.
    - Recruited farmers in January and have started soil samples using the Cool Farm Tool to assess the farms' carbon footprint.
    - Now in the process of developing a set of objectives for each farm.
- AgriCapture CO2: Looking at what regenerative agriculture looks like across Europe and knowledge exchange around the 5 principles of regenerative agriculture practices.
- Kellogg's Origins program:
    - The aim is to harness peer to peer learning - demonstrating what regenerative farming can look like and what works.
    - Working on a number of projects including nitrogen use efficiency and conserving the yellow hammer birds.
- Farmer Clusters: The Allerton Project is part of Game & Wildlife Conservation Trust, a pioneer in farmer cluster projects, seeking to get farmers to work more cohesively together in their locality to benefit soil, water, and wildlife at landscape scale.
- BASIS Training:
    - Allerton runs different courses, including one in sustainable land management consisting of a full day in person training course for farmers, land managers, agronomists and advisors.
    - Increasingly they are working with people in the supply chain as businesses are asking this of their farmers.
    - Given that regenerative agriculture does not have a definition – not everyone knows what they are asking of farmers – so conversations need to happen around this.
- The Allerton Project also hosts workshops and visits for Defra to ensure policy and supply chain are in the same space.

Whilst representatives from **G's Fresh** and **Nomad Foods** were unable to attend the meeting - a summary of their work in this area was provided:

G's Fresh:

- G's Fresh are putting together a playbook for their growers, focusing on how and why regenerative agriculture works and how to implement the principles to communicate this to farmers.
- They are backing regenerative principles with the science of why regenerative practices make plants and ecosystems more resilient and minimise the need for external inputs.
- They are implementing the principles in order to deliver the big efficiencies of regenerative agriculture (more photosynthesis, liquid carbon cycle, nitrate free nitrogen and soil sociobiome) that deliver higher profits (than conventional farming), on similar or equal yields at lower costs.
- They are focusing on soil health, soil biology and photosynthesis optimisation.
- Evidence/metrics: They have a range of measures under consideration covering soil health, principles adoption, financial, (e.g. diesel use, purchased inputs spent/kg sold, irrigation used/kg sold), and food quality. Their priority measures are likely to include infiltration rates, an indicator species such as earthworms and phospholipid-derived fatty acids (PLFA).
- Experience so far:
    - They have been using cover crops extensively and are learning to grow mixes with a purpose and to choose destruction methods to match the purpose.
    - First batches of Johnson Su to inoculate bacterially dominated soils with fungi and microbes such as protozoa (instead of artificial fertiliser use) have also been successful.
    - They have found that the cost of growing a cover crop regeneratively is much less than the savings they get from reductions in fertiliser and cultivation cost - and that's even before they factor long term gains in soil resilience.
    - One of the challenges they face is how to transition to a full regenerative agriculture system without yield loss.
    - Another issue raised is when evaluating and reporting on results, how can we distinguish between the stages of regenerative whilst still remaining inclusive of those at early stages of regenerative.
- They are also keen to see businesses collaborate to make sure farmers are being told and asked for the same thing when it comes to regenerative agriculture.
- Whilst their playbook is still work in progress, they're happy to share it with businesses interested in this approach and to be put in touch with those wishing to collaborate in this area.

Nomad Foods (Birdseye team):

- The team at Birdseye have not set any regenerative policies internally but understand the regenerative agriculture principals with most implications to pea growing as being about minimising soil disturbance and winter cover cropping (more focused on practices rather than principals).
- Whilst they have no commitment nor do they plan on publishing guidance on how to transition, they have some trials (cover cropping and minimising soil disturbance through different planting techniques) and are working with industry research bodies (PGRO – Pulse Growers Research Organisation) on research projects to help their growers.
- Experience so far:
    - Whilst some of their growers have individually embarked on a regenerative transition, the majority of pea growers have relied on ploughing for the past 60 years, as a method of control and providing consistency of variables. Their challenge is how to transition away from this without having a loss of crop quality.

    - They've had operational challenges and the presence of pests with cover crops acting as host species and green bridges to pathogens. They also faced issues with trash and residue left from cover cropping has limited operational effectiveness in previous trials.
    - They also raised the issue of how to establish when a farmer is 'regenerative'. Is it binary or can farms establish some effective elements of the accepted principles as a bridge away from 'conventional' farming? They see this as more of a spectrum than a binary.
- Just like G's Fresh, they are keen to see businesses collaborate, combining industry efforts rather than working in silos.

Arla updated participants on their regenerative pilots.

- Arla has 24 core pilot farms across its core market, with six in the UK. This includes two organic, two conventional that are grazing and two conventional under housing systems.
- Pilots were established in 2021. Year one was about bringing all farmers to a common understanding of regenerative agriculture, and interacting with their coach to understand their farm context and what sort of practices they would be interested in implementing.
    - Arla worked with Roots of Nature and FAI farms to give farmers one to one coaching and an introduction to regenerative agriculture.
    - Building trust and a regenerative agriculture mindset is very important.
    - They also collected baselining data across all pilots.
- Evidence/metrics: Arla wants this to be farmer led, so data collection is also farmer led which is important for them to understand how much time and resources this will cost.
- They are happy to keep SHIP members updated as things progress.
- Arla is also part of an industry collaboration with the SAI platform, who are trying to come up with industry alignment on a regenerative agriculture framework. Part of this will also seek to define what it means to be an engaged farmer in regenerative agriculture.

Yeo Valley also provided an update on their regenerative projects and their regenerative journey so far.

- Yeo Valley's regenerative agriculture journey consists of 3 pieces of work which are all connected.
- They started in 2018-19 on their own farm, looking at soil carbon, climate footprint and baselining their soil carbon with the Farm Carbon Toolkit.
    - Results showed a huge amount of variation – not always related to topography and terrain. It also showed where there are opportunities for improvement.
- They rolled out a similar approach to 25 farms in their network. They have just finished collecting data from 18 thousand acres and now have a soil dataset on these organic systems. The soils are in general in good health.
    - The Farm Carbon Toolkit also engages farmers with their soils and helps them understand what their threats and opportunities are.
    - They will now need a second data point to go beyond baselining, which will be carried out starting in 2025.
    - The Advertising Standards Agency (ASA) has just agreed with the Soil Association that organic farmers can say they farm regeneratively.
- Yeo Valley Production buys non organic milk for their retailer own label production and they have just started a similar project with those farms.
    - They are working with First Milk to recruit a regenerative agriculture dairy group. These farmers will receive support for certain practices – largely based around 5 regenerative agriculture principals. They do not want to be too prescriptive.
    - They want to encourage them to have a pasture-based approach and reward production from grass, perennial cropping systems and home produced feeds.

The University of Leeds shared their ongoing project on building the evidence base for regenerative agriculture.

- Whilst it is encouraging to see the supply chain engaging with regenerative agriculture – MRVs, evidence base and metrics are missing from most of these business initiatives. Businesses are also looking at regenerative transitions to meet Net Zero and GHG emissions targets - but there is actually very little evidence on the impact of regenerative agriculture on GHG emissions or offsets.
- The University of Leeds is seeking to address such gaps via a research project led by the University of York – FixOurFood, with the wider aim of transforming the food system.
- Research at the University of Leeds is focusing on regenerative agriculture and has co-designed pilots with farmers in Yorkshire.
- They are looking at different transition strategies to demonstrate and measure the impacts of these different transitions (set of practices) i.e. on soil health (chemistry, biology and physical), GHG emissions throughout the year, crop yield, gross margin, pest and pathogens etc. to determine which pathway has the potential to deliver the most positive outcomes.
- They have 5 different treatments in an arable system (looking to integrate the 5 principles of regenerative agriculture):
    - 1st treatment - conventional, single wheat species, soil has been ploughed and synthetic fertilisers used.
    - 2nd - min-till and farmland manure, synthetic fertiliser and single wheat species.
    - 3rd - the above but with a combination of wheat varieties rather than a monoculture.
    - 4th - incorporates livestock, with sheep grazing on wheat.
    - 5th - has an understory of legumes and herbs.
- In addition to these 5 treatments - they will be looking at transitioning to another crop after summer and will add herbal lays for different periods.
- This project is funded for 2-3 years, but they would like to continue in the long run to see changes in rotations, livestock etc.
- This will provide evidence on the impact of regenerative agriculture on cost, yield, farm business, environmental benefits and farm resilience.

<u>Discussion</u>

- It is currently unclear how regenerative projects are contributing to higher Net Zero targets. MRV packages are important, however these are not straightforward. This is work in progress for most businesses.
- A segregation process to guarantee the connection between a specific crop and a specific environmental outcome is regarded by most as being too complex. A robust link should be established without the need for such level of segregation.
- Conservation agriculture, sustainable land management and regenerative agriculture are often used interchangeably - how are these different?
    - Whilst they all mean different things, they have a lot of crossover.
    - Regenerative agriculture has captured the farmers' imagination the most – which is important as this means they're actually interested in it.
    - Conservation agriculture is an older term - conserving rather than restoring soil (regenerative agriculture is more developed with 5 principals).
    - At the core of all three is better farming for the planet and farmers.
- When it comes to metrics and outcomes, it is important to also include economic indicators. Reports from the Boston Consulting Group (BCG) and the World Business Council for Sustainable Development highlight the potential windfalls for farmers to engage in regenerative agriculture, and it is important for them to understand where reductions of costs can be built in.

    - There may be a role for businesses in transmitting such information to farmers, as they may not have the time to read such reports.
- How the government interacts with business led projects will be important, as the £2.4bn budget for the SFI will not be enough.
- Some voiced their concerns about the potential of having unified standards for regenerative agriculture. There is a risk of having competing standards which will not be helpful for farmers or businesses.
    - Instead, businesses should focus on helping develop a philosophy, principals and a change in mindset in farming. Practices, metrics and guidance is also very important, as it helps give a story and provides different entry points for different farmers.
    - Unifying standards tends to bring things down to the lowest denominator and becomes a tick box exercise.
    - A regenerative transition is about having the right skills but also about change management. Regenerative agriculture is about trying to recreate a farming environment where nature thrives and that is not a regimented framework which humans tend to like. Simply asking farmers to shift to another list of actions won't achieve a change in mindset and won't enable farms to develop a way to cope with risk and change.
    - As such, a premium certification may not be a good idea, however in some cases this does seem to be getting interesting traction - it may work for some.

<u>Resources shared:</u>

- What is Regenerative Agriculture? (The Table) https://www.tabledebates.org/sites/default/files/2023-06/What%20is%20regenerative%20agriculture_TABLE%20Explainer_2023.pdf?mc_cid=645987961a&mc_eid=9421892e56
- Farming at the sweet spot (NFFN and the Wildlife Trust) https://www.wildlifetrusts.org/sites/default/files/2023-06/Farming%20at%20the%20Sweet%20Spot_1.pdf