

# Appendices

# Barriers in Full

Barrier	Farmers/ Land Managers	Finance Sector	Supermarkets / F&B	PES Buyers
<b>DATA BARRIERS</b>				
Lack of agreed farm boundary information	✓	✓	✓	✓
Lack of digital farm boundary data	✓	✓	✓	✓
Lack of agreed habitat baseline data	✓	✓	✓	✓
Lack of access to agreed data at both farm parcel and habitat baseline level	✓	✓	✓	✓
Lack of incentives around data collection	✓	✓	✓	
Cost of data collection				✓
Lack of clarity around outcomes metrics	✓	✓	✓	✓
Concerns on data sharing	✓			
Concerns on access to private data	✓			
<b>CONFIDENCE BARRIERS</b>				
Lack of awareness of finance opportunities including grants	✓			
Lack of understanding of transition risk or cost/opportunity of transition	✓	✓	✓	
Lack of clarity around government outcomes desired	✓	✓	✓	✓
Knowledge gap on appropriate management practice interventions	✓	✓	✓	✓
Lack of trust in environmental market development	✓	✓	✓	✓
Confusion around contract lengths	✓	✓		✓

Barrier	Farmers/ Land Managers	Finance Sector	Supermarkets / F&B	PES Buyers
Lack of clarity around additionality and stacking rules	✓			✓
Lack of confidence in aggregation models	✓		✓	✓
Lack of clarity around outcomes metrics	✓	✓	✓	✓
Lack of systems approach (cross-sector collaboration)	✓	✓	✓	✓
<b>IMPLEMENTATION BARRIERS</b>				
Lack of confidence in aggregation models	✓	✓		✓
No soil carbon code agreed	✓		✓	✓
Lack of access to agreed data at both farm parcel and habitat baseline level		✓	✓	✓
Tax implications	✓			✓
Government grants/subsidies risk of crowding out private sector funding	✓			✓
Lack of clarity around outcomes metrics	✓	✓	✓	✓
Lack of clarity around additionality and stacking rules	✓			✓

Figure 6: Full list of Barriers



# Aggregation Model Case Studies

**Box 15:** Wyre Catchment NFM Project

## Wyre Catchment NFM Project

- ▶ The Wyre Catchment Natural Flood Management Project is the first example in the UK of the use of repayable private investment enabling the delivery of natural flood management. The Project is led by the Rivers Trust, Wyre Rivers Trust and the buyer group – including United Utilities and the Environment Agency. The project is located near Churchtown, an area faced with increasingly severe and frequent flooding, and out of scope for further ‘grey’ flood defences.

Aggregation was key to ensuring the success of this project. Natural flood management solutions often need to be delivered in volume across a catchment. Similarly, many organisations can benefit from flood risk reduction, but there is a hesitancy for one buyer to pay for natural flood management over several years. Aggregation of both buyers and sellers was therefore required.

Around 15 land managers have agreed to host up to 1,000 interventions – such as hedgerow planting and pond creation – on their land for up to nine years, with the possibility of extending the project to up to 50 years. These land managers, mainly farmers, receive a lease payment for this hosting that is paid by the buyer group, while up-front costs of installing these interventions are met with investment from impact funds and high-net-worth individuals. Upon confirmation of scientific targets being met in Year Five, the buyer payments increase significantly to begin investment repayment. If these targets are met, investment will be repaid in full by Year Nine.

The Project is run through a Community Interest Company (CIC) limited by guarantee and with a 100% asset lock, meaning any excess profits can only be spent on further flood-risk reduction for the community. This structure was seen as the best choice, as the project team felt strongly that neutral ownership (no equity) would be an advantage, and that the choice of legal entity should reflect the fact that this project exists primarily to benefit the local community.

Almost all contracts are made through the CIC. The Rivers Trust runs the CIC’s operations through an Asset Management Contract. The Wyre Rivers Trust is also contracted for the installation, major maintenance, and monitoring of the interventions. Each of the buyers and landowners have individual contracts with the CIC, and each buyer/seller contract is identical in terms, apart from payment figures.

Over two years, the project cost £120,000 to develop. Going forward, £15,000 p.a. is dedicated to the running of the CIC, plus £20,000 p.a. for project management and monitoring in the catchment effectively captured within the annual payments made by buyers.

## Box 16: Poole Harbour Nutrient Management Scheme

## Poole Harbour Nutrient Management Scheme

- The Poole Harbour Nutrient Management Scheme is a farmer-led initiative in the Poole Harbour Catchment of Dorset, aimed at reducing the levels of nitrogen in the catchment that have historically caused excessive eutrophication (algae blooms) in its waterways. It is governed by farmers of the catchment, with support from the NFU, Environment Agency, Natural England, Wessex Water, and the Dorset Catchment Partnership.

Aggregation is required due to the scale of the environmental issue impacting the whole catchment. Overall, the Scheme aims to reduce agricultural nitrate run-off in the catchment by 600 tonnes per year by 2030. To give a sense of scale, previous scientific estimates showed that an average hectare of farmland in the catchment leaches 0.027 tonnes of nitrogen per hectare per year.

These targets were given the Environment Agency, which proposed a Water Protection Zone in 2016 that would place blanket restrictions on all relevant businesses to reduce nitrogen levels through a 'glide path' up to 2030. The project team, driven by the farmers of the catchment and the NFU, counter proposed the concept of a Nutrient Management Scheme.

The Scheme incentivises the ~550 farm businesses in the catchment to participate via its voluntary and market-led approach that offers the chance to 'go the extra mile' for the environment. Farmers able to reduce their nitrate run-off beyond their individual targets can sell the excess nitrate 'credits' to those who cannot meet their own targets. The Scheme will also facilitate the sale of excess credits to other sectors that must reduce their nitrate run-off, including water companies and developers.

The Scheme is now run through the Poole Harbour Agriculture Group Community Interest Company (CIC), limited by guarantee with a 100% asset lock. The CIC was seen as the best choice for the Scheme due to its focus on environmental benefits for the catchment, and the neutral ownership (no equity) structure. It was also much easier to set up than a charity and requires any profits to be shared only for the improvement of the catchment's water quality.



## Environmental Farmers Group

- The Environmental Farmers Group (EFG) is a natural capital trading co-operative developed by farmers across several farmer clusters in the Avon catchment. It was founded by farmers in 2021 with two aims:
  - To respond to uncertainties around the new replacement schemes for the Basic Payment Schemes by exploring alternative income streams, and
  - To collectively support environmental uplift in the River Avon Catchment.

The EFG's environmental objectives are: to achieve clean water; reverse biodiversity and species loss; and to reach net carbon zero farming by 2040 in the catchments in which it operates.

Alongside these key environmental outcomes, the EFG as an aggregated farmer-led model aims to provide a fair financial return for the farmers involved in restoring natural capital through the sale of biodiversity units, nutrient offsets and carbon credits.

There are currently more than 90 farmer members within the EFG co-operative model ranging from small 20 hectare farms to farms with several thousand hectares under management. Dairy farms, arable farms and country estates are represented within the group that collectively spans over 40,000 hectares, and includes tenanted and farmer-owned farms.

Members agree to sell natural capital via EFG and EFG sources the trades. In order to develop scale and ensure the inclusion of smaller farms, equalisation is built into the member contracts. 88% of the value of any trade will go to the member farm providing the ecosystem service and/or environmental outcome, 9% is shared with the farms in the catchment area and the remainder pays for the operational costs of EFG.

A further aim of EFG is to have baseline environmental data produced and owned by farmers. It is looking to establish a baseline for the whole group against which improvements can be measured, so that members which have already created environmental improvement projects will not be penalised. Individual farmers can additionally join ELMs, with the EFG being appropriate also for participating in Landscape Recovery.

The aggregation model provides an opportunity for organisations looking for large-scale environmental trades to deal with one body, instead of multiple individual farmers, as well as providing access to recognised scientific monitoring of its "whole catchment" conservation plan, supported by the Game & Wildlife Conservation Trust (GWCT). EFG also brings together landowners and tenants and enables them to develop a common conservation plan for the whole Avon catchment through knowledge sharing on data collection, mapping and understanding the economic and natural potential of the land. With the conservation plan, EFG can track and measure environmental improvements to evidence how its farmers are meeting and/or exceeding government targets.

The Game and Wildlife Conservation Trust through its subsidiary Natural Capital Advisory provides development and support services to EFG, with the NFU providing guidance. It also receives funding from NEIRF and sponsors. Funds are also raised through a subscription fee from its members (£1.25/ha per annum) and sponsorship from local farm suppliers.<sup>1</sup>

<sup>1</sup> [https://www.environmentalfarmersgroup.co.uk/wp-content/uploads/2022/05/018-019\\_FWE\\_130522.pdf](https://www.environmentalfarmersgroup.co.uk/wp-content/uploads/2022/05/018-019_FWE_130522.pdf)

## Green Farm Collective

- ▶ The Green Farm Collective (GFC) is a farmer led group focussed on using regenerative farming practices to access natural capital markets including carbon and biodiversity. The Collective is run by a group of six farmers, all having a shared interest in promoting soil health and regenerative agriculture and all having won various awards including Farm Carbon Toolkit's Soil Farmer of the Year, among others. The GFC aims to build a community of like-minded farmers all working towards achieving net zero, improving farmland biodiversity, diversifying farm income streams and promoting local supply chains.

Set up in 2021, the GFC was incorporated as a Limited Company with the six founding farmers as Directors. Costs of set up were covered by the Directors themselves and included legal and accountancy fees for filing at Companies House.

The Collective is driven by a shared desire to scale regenerative farming practices across the country and to diversify farm business income for their members. For example, Directors of the GFC farm across Essex, County Durham, Worcestershire, Gloucestershire, Vale of York, Shropshire and Staffordshire. As such this aggregation model does not focus on a specific catchment, geographic area or supply chain.

The GFC business model includes a membership revenue stream and farmers can join the Collective through the Active Farm Membership by paying an annual fee of £250. Further membership tiers include Individual Advisor membership, Corporate membership (priced on application) and Public membership.

All natural capital and ecosystem services trading happens through Trinity Natural Capital Markets where buyers of natural capital can purchase on farm biodiversity through annual agreements. Biodiversity is sold either as 'broadacre' (care for soil) or 'enhanced' (practices and features that enhance nature – ponds, pollen and nectar field margins). Each biodiversity action is bespoke and is costed independently of other transactions. For carbon, member farmers can sell carbon offsets through the same platform to corporates wishing to offset their carbon emissions.

Revenue is also generated as a percentage fee on transactions with 5% of transaction revenues contributing to Green Farm Collective's running costs and 5% to Trinity Natural Capital Markets for the use of Trinity AgTech's 'Sandy' Platform, with the remaining 90% going to the farmer. Other business lines of the GFC are through selling premium products in local supply chains. Using the GFC brand tied to farming regeneratively, local purchasers are willing to pay a premium for products sourced through GFC affiliated farms.

Active Farm Membership is for farmers who wish to join the Collective and access biodiversity and carbon markets through the GFC. Should those farmers want to trade natural capital and use GFC's brand, then they must adhere to certain criteria. These include a minimum level of land farmed for nature, protecting and minimising disturbance to soils, integrating livestock and minimising Nitrogen use on farm. Farmers trading through the collective will be audited and follow up audits may be repeated at any time. Farmers will also be required to conduct baseline carbon and biodiversity measurements and submit data through Trinity AgTech's Sandy platform and will receive a 15% discount on the cost of baselining.

To increase the uptake of regenerative farming techniques across the country, the GFC also focus on knowledge sharing. A key benefit of the Active Farm Membership, is the access to an online community where member farmers can share experiences and learnings, and also access consultations from the founding members.

Corporate membership is done on a Price on Application basis and packages revolve around branding, promotion, open day stands and affiliation among others.

## North East Cotswold Farmer Cluster Group

- The North East Cotswold Farmer Cluster (NEFCG) CIC came together as a result of conversations that took place during the Covid-19 pandemic regarding how the local farming community could work more collaboratively to ensure a resilient farming community that would be financially and ecologically viable. The initial goals were to ensure there was appropriate knowledge transfer within farming members to enable best understanding and access to the Environmental Land Management scheme (ELMs) and to promote a more local food value chain in the interests of the health and wealth of the local community.

This led to a formal incorporation as a Community Interest Company (CIC) thus ensuring any surplus funds are reinvested to achieve our social objectives, rather than being driven by the goal of maximising profit. A formal vision statement was therefore adopted: "To lead landscape-scale regeneration of the farmed environment and local food networks in the North East Cotswolds through collaboration and knowledge exchange" and an aim of "growing into an inclusive and pro-active group of local farmers, growers, landowners, foresters and advisers who work and learn together to enhance the natural capital on their land, tackle the climate emergency and build more resilient food and farming businesses."

A group of 30 founder farmer members developed the group's strategy and agreed on a governance structure comprising a steering group (eight members) and three farmer members as Directors of the CIC. A combination of public funds, private corporate grants and philanthropic donations enabled initial part-time engagement of the founder-facilitator (Tim Field). This seed funding was leveraged up into 100% more funding secured in FY21/22 and a further 125% y-o-y increase in FY22/23, delivering eight projects and knowledge exchange at the landscape scale. Running costs of the farmer group and management of the current project pipeline is in the region of £100,000.

The CIC's six objectives are: 1) Improve the health of our soils; 2) Map, create, enhance and link priority habitats; 3) Support entrepreneurial thinking and the growth a local food economy; 4) Make the most of future policy and access private investment and public funding opportunities; 5) Evaluate progress and landscape/farm level outcomes and outputs; 6) Foster community engagement and outreach.

With this framework formally in place, the NECFC has grown in just 2 years to over 127 farmer and landowner members across over 40,000ha, has built relationships with UK Government and seen public and grant fund injections via e.g. FiPL, Leverhulme Trust and supporting members to leverage private finance to achieve their goals. These are being formally expanded through a Natural Environment Investment Readiness Fund (NEIRF) grant project with Rothamsted Research and Oxbury Bank to formalise the role of debt finance in transition and now also through a successful application for the Landscape Recovery Pilot – a 50 farm, 3,500ha and multi-stakeholder project to substantially restore and enhance the habitats, natural capital and ecosystem service provisioning capability of the river catchments and farmed environment in and around the floodplain. The project will identify investors seeking differential returns to support the ongoing capital and operational expenditures required over the 20+ year timeframe of the project and seek funding via the plethora of ecosystem services that can be sold to corporate and other funders. These include, but are not limited to voluntary carbon markets, biodiversity net gain, water quality, natural flood management, access to nature etc. The project is now in development phase and building the appropriate legal and financial structures to achieve this bold and necessary ambition including ensuring the landowners/tenants and farming members both within the project boundary and in the cluster receive a fair return for their support of these provisioning and regulating ecosystem services. This work is ongoing throughout 2023 and 2024 and is currently seeking investors.

The NECFC in general and the Landscape Recovery Pilot Project specifically use the scale offered by aggregation to successfully engage with buyers of ecosystem services.

## Landscape Enterprise Networks (LENS)

- ▶ Landscapes Enterprise Networks (LENS) is an initiative launched through a collaboration between Nestlé and 3keel, to promote sustainable agriculture and improve the environmental performance of supply chains. As the name suggests, LENS brings together beneficiaries of landscape scale environmental change together with farmers in an aggregation model.

The programme provides training and technical assistance to farmers to help them adopt more sustainable practices, such as agroforestry, soil conservation, and water management. LENS then brokers negotiations and transactions between buyers of nature-based solutions and groups of landowners who deliver them.

The program also involves collaboration with local governments, non-governmental organisations, and other stakeholders to support the development of sustainable agriculture policies and the creation of ecosystem services markets. Currently, there are LENS groups in Cumbria, East of England, Hungary, Poland, and Italy.

The first step in the LENS process is 'Network Opportunity Analysis' whereby organisations which have a shared interest in the performance of a landscape and its assets are identified. Landscape assets include soils, rivers and streams and provide services such as water quality and flood risk mitigation.

The next step is to work with the demand side interests with common needs, water companies and tourism operators for example, to define a common specification for services. Different businesses may pay for different environmental outcomes across the same landscape.

The supply side will also be engaged to define what can be delivered. LENS will then work to broker a deal between the two groups.

Finally, the network will grow as new businesses and stakeholders are identified and as such, an organisational structure is needed along with governance to manage any future trades in a transparent and accountable manner.<sup>1</sup>

In the East of England, a LENS transaction was completed in 2021 through identifying Nestlé Purina, Cereal Partners UK, West Northamptonshire Council and Anglian Water as stakeholders with overlapping interests in the performance of the landscape. The transaction was valued at £1 million with the aim of using nature-based solutions to achieve outcomes including resilient agricultural supply chains, flood risk mitigation, water quality improvements, GHG emissions reduction, carbon sequestration and increase in agricultural land managed in a more 'regenerative way'.

Active stakeholders in the East of England LENS model now include Affinity Water, Anglian Water, Cargill, Cereal Partners UK, Essex and Suffolk Water, Nestlé Purina and West Northamptonshire Council and this consortium is now looking to engage farmers to co-procure ecosystem service outcomes to help meet their various needs. The value of the next trade is expected to be £2.5 million, and the number of farmers engaged has now more than doubled.<sup>2</sup>

<sup>1</sup> <https://landscapeenterprisenetworks.com/how-lens-works/>

<sup>2</sup> <https://landscapeenterprisenetworks.com/east-of-england/>

## Arla Cooperative

- ▶ Arla is a dairy co-operative, owned by more than 9,000 farmers covering seven countries in Northern Europe. In the UK it is one of the country's biggest co-operatives having over 2,000 British dairy farmers as owners, supplying more than 25% of the UK's milk pool.<sup>65</sup>

As a cooperative, Arla is owned by its members, who pay a membership fee per litre of milk to be a part of the co-operative. Arla has 15 farmer owners on its Board of Directors (BoD) and 179 on its Board of Representatives (BoR), elected through a democratic process through which every farmer owner has one vote. Arla's BoR is its main decision making body and is responsible for appropriating the profit for the year and electing the members to the BoD.<sup>66</sup>

Arla controls the full value chain for its members, whereby its farming owners produce the milk which Arla will purchase at the same price for every farmer regardless of location and will then sell onwards as milk or other dairy products. When Arla products are purchased, all earnings go directly back to the farmer owners. The milk price paid is driven by a number of factors including cost of production and global demand for milk products. Arla's Board of Representatives determines the pricing model which the Arla Board uses when it defines the milk price each month. As Arla farmer owners have agreed to share equally the earnings from each litre of milk they deliver to Arla, all farmer owners share in the performance of milk sales.<sup>67</sup>

There are a number of initiatives within Arla to reward farmers for taking climate friendly actions on their farms. As Arla sets the price of milk each year, it can add on incentives on top of this price to encourage farmers to take these actions. The first example is Climate Check.

Climate Check is an initiative set out in response to an internal target to reduce GHG emissions by 30% per tonne of standardised raw milk and whey by 2030 from a 2015 base year.<sup>68</sup> Climate Check is a tool containing more than 200 questions collecting data on animal numbers and movements, breed, the feed used, produced and sourced, use of fertiliser, waste and manure handling, use of fuel and energy including use of own renewable electricity. It will also gather data on peat including CO<sub>2</sub> and nitrous oxide emissions from peat soils.

A preliminary carbon footprint of each kilogram of milk produced on each farm will be produced and these results will then be verified by an external agricultural climate advisor who will also provide advisory support on further actions to reduce emissions. Participation is mandatory for organic producers and voluntary for conventional milk producers.

To incentivise participation, farmer owners are paid a premium on the milk price from Arla equating to 0.01 eurocent per litre and in 2022, 95% of Arla's farmers registered data in the 2022 Climate Check. The entire process is audited by Ernst & Young global Ltd and the tool will continuously be aligned with new developments in climate science as well as new developments in farming practices. The tool is however not comparable with other dairies, as it is an internal tool developed by Arla for Arla farmer owners to support them in reducing emissions.

<sup>65</sup> <https://news.arlafoods.co.uk/cooperative/farmer-owned-our-cooperative-model>

<sup>67</sup> <https://www.arlafoods.co.uk/about-arla/who-we-are/arla-farmer-owned-cooperative/>

<sup>68</sup> Arla Foods Climate Check Report 2022. Data Driven Dairy. How Climate Checks Are Driving Action to Reduce Emissions on Arla Farms

## Arla Cooperative continued

The Sustainability Incentive Model has been implemented as part of Arla's transition to a more sustainable dairy by motivating its farmer owners to take up actions required to meet Arla's 2030 emission reduction target on farm.<sup>69</sup> It is a points-based voluntary initiative but submission of Climate Check data is a prerequisite to taking part. Participating farmer members will receive a premium for certain actions they implement on farm, including eligible items that are already in place. A total of 80 points are available and are weighted towards carbon reduction measures. Arla have calculated that if their farmers manage five main levers accurately almost a third of the reduction necessary to meet Arla's 30% reduction target by 2030 will be achieved.<sup>67</sup> These include fertiliser use, land use, protein efficiency and animal robustness, with 49 of the 80 points available coming from these measures. Remaining measures include actions on sustainable feed, biodiversity and carbon farming, manure handling, renewable electricity and knowledge building.<sup>67</sup>

Farmer members will receive 0.03 eurocent per kilo of milk produced on top of the milk price, and the 0.01 eurocent received for completing Climate Check. With an estimated average based on Climate Check participation, Arla have calculated that SIM will distribute EUR 270 million to their farmer owners in 2023 through the monthly milk price based on current participation in Climate Check.



<sup>69</sup> <https://news.arlafoods.co.uk/cooperative/farmer-owned-our-cooperative-model> <https://news.arlafoods.co.uk/news/arla-earmarks-up-to-500-meur-eurocent-annually-for-rewarding-climate-activities-on-farm>