

Priority Environmental Outcomes Metrics

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Challenge and Opportunity

As outlined in the **Background** section of this report, the UK Government has reoriented agricultural policy towards supporting the delivery of environmental outcomes alongside food production. The UK has ambitious goals for how the agriculture sector can function in alignment with nature and help the country achieve net zero and other environmental commitments.

The private sector is also increasingly working with farmers to help them deliver on their own environmental objectives and aid in increasing resilience of the food supply, through offering financial support or the provision of tools or measurement assistance. To aid in this transition, banks, as well as food and beverage firms including retailers, are seeking to understand the baseline environmental impact of farms in their portfolios and supply chains and use farm-level environmental data to identify appropriate areas for intervention, provide financial support where appropriate, and to track progress.

There are four core barriers preventing private sector finance from flowing to support farmers transitioning to nature positive farming which the below recommendation would address:

1. a lack of consistency in the environmental data farmers are asked to provide to different stakeholders
2. a lack of confidence on the part of banks and F&B retailers in the quality of data provided
3. a lack of incentives and support for farmers to collect and provide data, and
4. a lack of confidence across stakeholders around what constitutes high-integrity measurements.

The UK Government has set out multiple environmental targets and commitments for the agricultural sector, including activities required for England's new

agricultural subsidy schemes. However, it has yet to explicitly and simply state a set of priority environmental outcomes expected from the farming sector in particular or guidance on measurement practices for those outcomes. Although multiple pieces of environmental legislation and commitments have been released in recent years, farmers are unclear on what the overarching environmental vision is for the agriculture sector, the opportunities available to them, and which data they should be collecting and monitoring in order to demonstrate impact.

This also means that banks, supermarkets, and food and beverage companies are unclear on the data they need to collect from farms, and in some cases are asking farmers for different sets of data or the same data, measured in different ways.

At the same time, farmers do not feel incentivised to collect data or to provide environmental data to the private sector unless selling ecosystem services against which that data is required, or for specific certification schemes.

Unless environmental outcome targets are expressed simply and farmers are incentivised to collect data, Government risks being unable to track progress against its own commitments.

Collecting this environmental data will not be without its own challenges, including questions of cost and concerns around data privacy. [See **Data Access and Availability**]

However, the direction of environmental reporting for the private sector cannot be ignored. Stakeholders across the food supply chain are increasingly seeking farm-level environmental data to meet disclosure requirements.

Additionally, UK farmers will need to be able to compete with foreign producers for market access. For example, the EU's Corporate Sustainability Reporting Directive (CSRD), which came into force in January 2023 for the

2024 financial year, will require all large and listed companies to report on their environmental impacts, dependencies and financial risks³² UK retailers could substitute UK agricultural products with imported ones (particularly from the EU) if they see better progress against environmental objectives on foreign farms.

There is an opportunity now for government to work with the private sector and farmers in ensuring environmental data collection is appropriate – by identifying a set of priority environmental outcomes metrics, and then ensuring that challenges around collection and provision of data for those metrics are addressed, including ensuring farmers are not forced to provide private and commercially-sensitive data.

High-level guidance on the measurements underlying each metric, and the sharing of costs of farmer data provision and measurement are also needed.

Farm Environmental Outcomes Data

There are multiple environmental outcomes across agriculture which farmers can measure on their land. There also are multiple indicators and measurement approaches for each outcome metric.

A selection of data collected under different schemes is outlined in **Table 3** below.

Scheme	Environmental Metrics	
Environmental Improvement Plan 2023	Pollutant Emissions GHG Emissions Soil Health (in development) Area of Woodland Volume of Inputs Pollution entering waterways (interim)	Habitat: quantity, quality & connectivity (in development) Relative abundance and/or distribution of widespread species (interim) Impacts from flooding (in development) Impacts caused by drought (in development)
Red Tractor	Animal welfare Antibiotic & hormone use Manure management Use of plant protection products	Soil management Water usage Fertiliser use Impact on wildlife
Leaf Marque	Soil fertility Crop health & protection Pollution control Energy efficiency	Water management Landscape & nature conservation Society engagement Animal welfare

³² EU Corporate Sustainability Reporting

Scheme	Environmental Metrics	
RegenAgri	<ul style="list-style-type: none"> Cover crops Crop rotation Inter-cropping Fertiliser usage Irrigation practices Soil Health Grazing patterns Pasture biodiversity 	<ul style="list-style-type: none"> Animal feed sourcing Animal Health Habitat Conservation Water Quality Community Involvement Energy Source Emissions
Global Farm Metric	<ul style="list-style-type: none"> Yields Yield quality Crop diversity Farm Biodiversity Farm Habitats Air, soil & water quality Average climatic conditions Extreme weather events Growing season Soil carbon storage & Sequestration Soil Health 	<ul style="list-style-type: none"> Soil conservation (erosion) Soil Water Holding Habitat Water Holding Inputs Nutrient balance Macro & micro-nutrient stocks Energy & Fuel usage Infrastructure Environmental fit of crops & animals Lifecycle of crops & animals Crop health Animal health & welfare
Soil Association Exchange	<ul style="list-style-type: none"> Soil health Water Quality Biodiversity 	<ul style="list-style-type: none"> Net emissions Land access Flood risk

Table 3: Examples of Habitat Data Languages Environmental Data Schemes

Recommendation

We recommend that the UK Government determines a set of priority environmental outcomes metrics, messaged clearly and simply for England’s farms by working with stakeholders across the food supply chain. These outcomes could align with the agricultural targets set out in the Environmental Improvement Plan 2023 (EIP23) but be targeted specifically toward farmers. The establishment of a priority set of environmental outcomes metrics for agriculture would provide a vision and direction around which the farming, agrifood and finance sectors can galvanise to unlock opportunities to support the transition.

To ensure that the outcomes are measured in a consistent and comparable fashion and which does not unnecessarily burden farmers, we also recommend developing overarching guidance on how to measure each metric..

Finally, we recommend that the UK Government, working with the private sector, seeks to incentivise and support farmers to measure and collect priority outcome data in order to ensure farmers can positively engage in demonstrating environmental delivery in line with agreed metrics.

- **Phase 1** - UK Government to set out priority outcomes metrics to guide environmental data collection on farms
- **Phase 2** - Assess and agree on measurement guidance for each metric
- **Phase 3** - Support and incentivise farmers to collect data

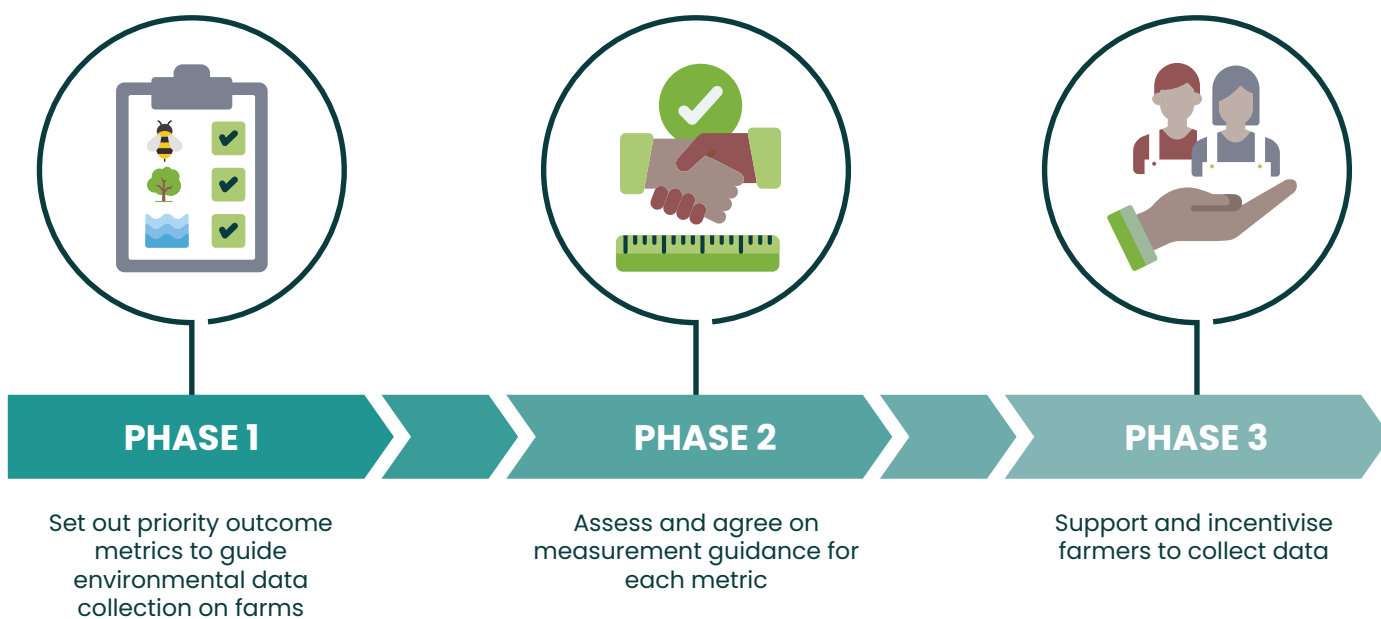


Figure 2: Key Enabler: Priority Outcome Metrics

Roadmap to Implementation

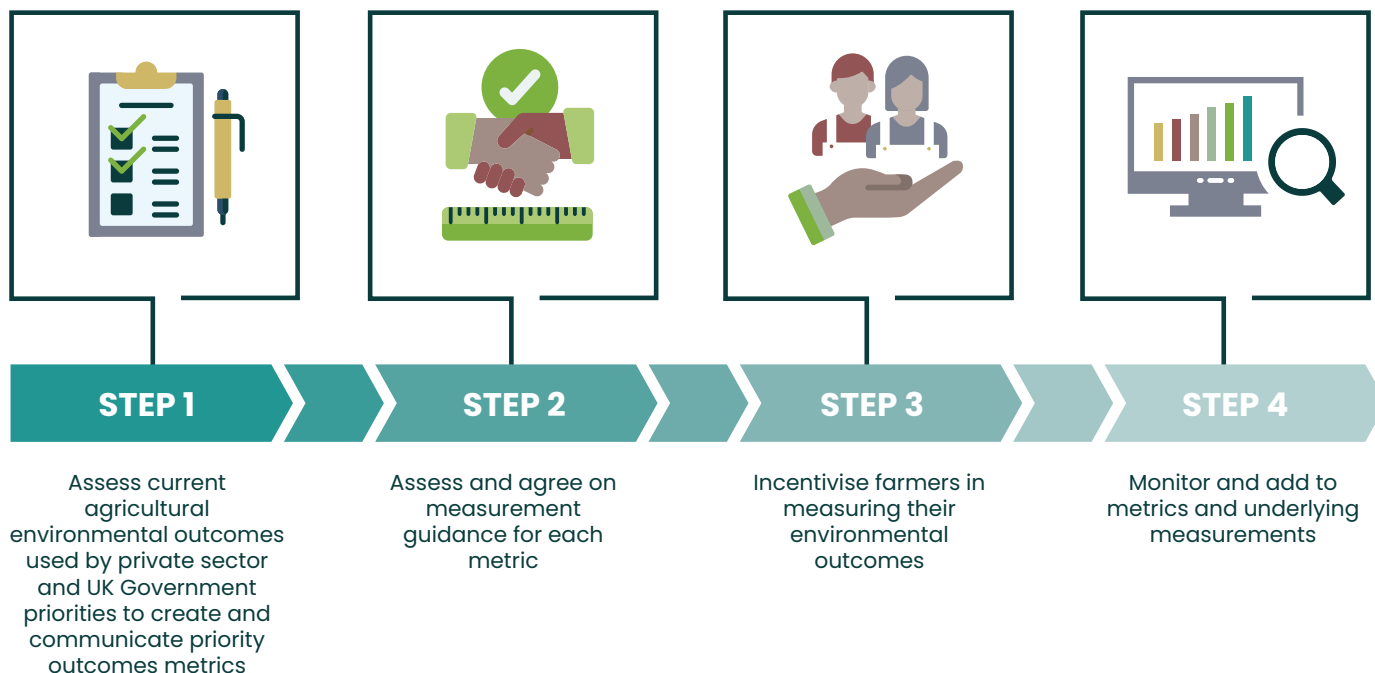


Figure 3: Key Enabler: Priority Outcome Metrics Roadmap to Implementation



Step 1:
Assess current agricultural environmental outcomes used by private sector and UK Government priorities to create and communicate priority outcomes metrics

We recommend that government sets out four to six initial key environmental outcomes it will require from the agriculture sector and ensure that these align with work already in progress by the private sector and that they are supported by the farming sector. These recommendations should enhance or support those within EIP23 to ensure that agriculture-specific outcomes are aligned with broader environmental targets.

Outcome metrics endorsed by government will need to be science-based and, in addition to aligning with the environmental data needs of the private sector, should capture the most urgent environmental outcomes for England.

There are several environmental outcome targets laid out by the UK Government – without making the explicit connection to agriculture. From workshops with our

Strategic Working Group and other UK stakeholders, in addition to interviews with a broader group of farming participants, the following priority metrics have been identified as aligning government commitments with private sector requirements:

➤ **Soil Health**

Soil health is defined as the continued capacity of soil to function as a vital living ecosystem that sustains plants, animals and humans. It is dependent on several factors that include soil structure and compaction, organic matter, soil biology and nutrient balance.³³ Soil health is therefore critical in determining long-term productivity and resilience of agricultural land and is also closely linked to other environmental outcomes such as water quality and retention, biodiversity and carbon sequestration.

³³ Environment Agency. 2019. The state of the environment: soil

Food manufacturers and retailers are increasingly focusing on soil health in their supply chain to ensure resilience and improve productivity. From the UK Government's perspective, having a clear understanding of soil health can aid in developing policies and programs to achieve the aims of environmental policies, such as bringing 40% of soils under sustainable management by 2028, as set out in the 2023 Environmental Improvement Plan, as well as ensuring sustainable management practices are in fact achieving improved soil health. Banks are also interested in soil health as healthy soil is key for productivity and resilience of farming businesses. With a £3.4 billion financing gap for sustainable soil management, interest in developing financial support for soil health by financial institutions is likely to increase in the coming years.³⁴

➤ Net Emissions

Net emissions includes both emissions from agricultural activity, buildings, machinery and livestock as well as sequestration levels of land (through soils, woodland, crops and peatland). Agriculture currently accounts for 11% of the UK's emissions. It is estimated that as other sectors decarbonise, agriculture could account for 30% of UK's emissions by 2030.³⁵ⁱ As the UK has adopted legally-binding targets to reach net zero by 2050, substantially decreasing emissions from the agriculture sector will be integral to achieving that aim. The agrifood sector will require supply chain emissions data to aid in reporting on TCFD. Banks similarly are reporting on TCFD and financed emissions of loan portfolios and will require this information.

➤ Biodiversity

The global biodiversity crisis has led the UK Government to set targets to improve biodiversity by 10% by 2042, in addition to committing to protecting 30% of land and sea for nature by 2030 under the Global Biodiversity Framework. Additionally, Biodiversity Net Gain will become mandatory for small sites in April 2023 and for other planning permissions in November 2023. A £19.4 billion finance gap has been estimated for protecting and restoring biodiversity in the UK after accounting for current public and private committed spending.³⁵ⁱⁱ Biodiversity loss also impacts food production by driving down pollinator numbers

necessary for crop production as well as microorganisms which keep soil fertile. The private sector, including food retailers are increasingly concerned with biodiversity loss in their supply chains as it increases risks to the food supply. Additionally, global commitments to halt and reverse biodiversity decline and catalyse finance for nature restoration has galvanized interest in the space on the part of government and financial institutions.

➤ Water Quality & Nutrients

In the 2023 Environmental Improvement Plan, the UK Government laid a target for reducing nitrogen, phosphorous and sediment pollution from agriculture into the water environment by 40% by 2038.³⁶ Measuring water quality and nutrient levels on farms will be key to decreasing pollution and meeting government targets for water quality throughout the country.

As mentioned previously, the Taskforce on Nature-Related Financial Disclosures (TNFD) is finalising a framework for corporates to measure and report on the nature-related risks in their operations and supply chains which will include impacts on water quality.

➤ Flood Risk

UK farmland is facing increased risks of flooding due to climate change in the UK while simultaneously being a solution to flood risk mitigation beyond the farm through the provision of Nature-based Solutions (NbS), such as vegetation planting.³⁷ The role of vegetation in flood risk reduction is a function of the vegetation characteristics (leaf area, root permeation and rates of hydrology loss from leaves) and the location of the vegetation (soil type, topography and position within the catchment).

Data that estimates the contribution of vegetation to reducing surface runoff would be useful in both determining the risk of flood, and flood prevention ability. On risk, interventions could result in lower insurance premiums and increased borrowing capacity, in addition to unlocking payments for flood alleviation. For example, the Wyre River Project is a natural flood management project where farmers are being paid to put interventions on their land to reduce flooding [See **Case Studies**].

³⁴ GFI, eftec, Raymond Consulting. 2021. The Finance Gap for UK Nature

³⁵ⁱ Mission Zero: An Independent Review of Net Zero

³⁵ⁱⁱ GFI, eftec, Raymond Consulting. 2021. The Finance Gap for UK Nature

³⁶ Environmental Improvement Plan 2023

³⁷ UK Climate Risk. Findings from the third UK Climate Change Risk Assessment (CCRA3) Evidence Report 2021 – Agriculture and Food



Step 2:
Assess and agree on measurement guidance for each outcome metric

With multiple approaches to measuring environmental outcomes on farm, government should convene with the private sector and farmers to agree on guidance on best practices for data measurement and verification. This will help build confidence among both farmers and the private sector. It will also incentivise innovation in the development of robust, science-based measurement, reporting and verification (MRV) tools.

Rather than endorsing a single measurement approach, it would be advisable to provide over-arching guidance to leave room for future innovations and to allow for different MRV tools to develop. We recommend that


guidance focuses on just two or three measurements in order to prevent farmers from having to gather multiple different data points. For example, in Table 4 below there are seven different methods for measuring soil health. If these can be narrowed down to two that, while not perfect, capture a ‘good’ view of soil health this would ease the data collection process on farms.

Guidance could outline the benefits and drawbacks of different measurement protocols to help farmers and the private sector choose the most appropriate and cost-effective, and also highlight best practices such as transparency and ground-truthing.

Outcome	Measurement	Tools and Providers
Soil Health	Earthworm Count Soil Structure Soil pH Loss on Ignition (SOM) Dumas Test(SOM) Walkley-Black (SOM) VESS Method	Independent Agronomists NatCap Research Soil Association Exchange Yara
Net Emissions	Land Cover Operational Emissions Tillage Crops Dry Ignition (Soil Organic Carbon) Soil Bulk Density	Agrecalc AI Dash & Other Remote Sensing Technologies CO2AI Cool Farm Tool Farm Carbon Toolkit Greenly NatCap Research Soil Association Exchange

Outcome	Measurement	Tools and Providers
Biodiversity	Management Practices (used as proxy) Habitats Habitat Connectivity Species Count Earthworm Count (Soil Biodiversity) Pollination	BioAcoustics Defra/Natural England’s Biodiversity Metric LandApp NatCap Research NatureMetrics eDNA Soil Association Exchange
Water Quality & Nutrients	Management Practices (used as proxy) Water Quality Measurements (Nutrient Levels) Farm Gate Nitrogen Balance	Farm Carbon Toolkit NatCap Research Soil Association Exchange Yara
Flood Risk	Topography Infiltration Rates On-farm hydrology	Aegaea ArcGIS Defra Flood Risk Tool Floods and Agriculture Risk Matrix (FARM) LandApp NatCap Research

Table 4: Summary of Measurements and Tools by Outcome



Step 3:
Incentivise farmers to measure their environmental outcomes

Although there are free tools farmers can use to calculate emissions and estimate other environmental outcomes, ground truthing and verification can be costly for farmers. In addition to data collection being regarded as resource-intensive, farmers have valid concerns around the use of their environmental data which can disincentivise collection. [see **Data Access and Availability**]

The costs of collecting and verifying data could be shared across government and the private sector in order to incentivise data collection at scale.

There are several examples of both approaches highlighted at the end of this section.

The Soil Nutrient Health Scheme is a publicly funded programme in Northern Ireland that evaluates soil health on the country’s farms. The Origin Green programme in Ireland conducts broader sustainability measurements at no cost to farmers. (See **International Examples Section** for further detail)

The finance sector has also begun supporting their lender farmers to collect environmental data. Lloyds Bank is working with the Soil Association Exchange (See **Box 3**) to offer the service free of charge to 1,000 of their portfolio farms. NatWest is currently piloting use of the Global Farm Metric on their lender farms (See **Box 2**) Similarly, Oxbury is currently working with Agrecalc, the LandApp, Downforce and Terramap to support their farmers to begin reporting environmental data. The varying metrics and tools used by different financial institutions and supermarkets makes data comparison difficult and increases the cost and complexity of data collection and analysis.

Below we highlight the role of monetary incentives. It is important, however, to highlight the tensions around payments for data collection. As covered in [**Data Access and Availability**] farmers are concerned about the future use of their environmental data. The ability for farmers to control their own data, even if paid for, will be imperative.

Monetary Incentives

- i. Provide grants for environmental outcome data collection on farms

The UK Government could provide a grant to farmers to incentivise them to collect their environmental outcome data. The value of such a scheme would need to be carefully considered with input from farmers to ensure it is effective in incentivising data collection. Within SFI you could have a baselining standard that could encourage effective baselining approaches.

- ii. Work with major retailers to understand where they are best placed to provide financial incentives

The private sector should be willing to incentivise farmers to collect and provide data – as it is supportive of their own reporting needs. Arla, a farmer-owned multinational dairy cooperative and the largest dairy in the UK, has introduced a successful programme to incentivise environmental data collection on their farms. The Climate Check programme offers a premium price on milk for those farmers who collect and share key environmental data with Arla. This has allowed Arla to gain an accurate picture of the environmental impact of their dairy farms and provide targeted advice to farmers to improve their impact and to help Arla reach its internal climate targets [see **Box 19** for further details].



**Step 4:
Monitor and add to metrics and underlying measurements**

It will be important to monitor progress towards priority environmental outcomes and be prepared to add to or change target outcomes metrics in the future.

There are several outcomes beyond those outlined above, for example, which were identified by stakeholders as being key to developing a holistic view of farm sustainability, but which do not currently have consensus across all beneficiaries listed above as being integral to each party’s data needs.

These include:

- Animal Welfare
- Water Usage
- Public Access

Measurement approaches may also need to change as new technologies emerge. Retaining a dialogue with farmers, the private sector and the scientific community will be imperative for the UK Government to keep abreast of measurement innovations and regularly update guidance.

Considerations

The establishment of priority environmental outcomes metrics with underlying measurement guidance will need to take into consideration the following points:

➤ Functionality

The priority outcome metrics and measurement guidance set by Defra should be clear and usable for farmers and should reflect the data needs of stakeholders across the agricultural supply chain.

➤ Governance

Farmers need to be assured that there are appropriate governance structures in place to protect and manage their environmental data. How environmental data is accessed and stored is a key concern for farmers who want to ensure that they retain adequate control of how their data is used and benefited from. See **Data Access and Availability** for important considerations around data access and privacy.

Beneficiaries

Agreeing on a priority set of environmental outcome metrics would support multiple stakeholders.

UK Government

With the transition out of the Basic Payment Scheme (BPS) and into ELMs, and with the targets in the EIP23, the UK Government has made it clear that positive environmental outcomes will be expected from English farmers and land managers. Yet, environmental outcomes metrics have not been explicitly presented in the context of agriculture, leaving farmers, banks and the agrifood sector uncertain as to what they will need to measure.

Additionally, there is currently no monitoring mechanism to demonstrate to Defra that the new agri-environment schemes will deliver on intended environmental outcomes. This could present a material and reputational risk to government as ELMs is rolled out and legally binding deadlines for environmental targets draw nearer.

Explicitly setting out the environmental outcomes the UK Government expects from agriculture will be the first step in tracking progress towards the Government's environmental goals.

It will allow Defra to determine the value for money of ELMs and to ensure that the practices and inputs paid for in the schemes are delivering on environmental outcomes. Greater awareness of the outcomes being delivered will highlight gaps and help inform policy if needed.

Farmers and Land Managers

Establishing a set of priority environmental outcome metrics will provide farmers with greater clarity on what to measure on their farms. With guidance around those measurements, they will also be better able to manage resources and costs, as well as understand the commercial value of their data and the commercial opportunities available to them from delivering outcomes.

Furthermore, farmers may benefit from the subsequent unlocking of private sector or government support – paying for baselining tools in addition to rewarding them for practices in line with environmental outcomes.

Finally, alignment from multiple stakeholders around a priority set of outcomes metrics would help to reduce reporting fatigue for farmers, increasing the time they can spend on animal and crop production and delivering environmental outcomes by reducing their reporting burden. As mentioned in previous pages, there are considerations around data privacy, costs and resourcing that must be taken into account. These are detailed in the **Considerations** section for the **Data Access and Availability** chapter.

F&B and Retail Sector

The food and beverage and retail sectors have increasing external environmental reporting requirements which may require working with farmers to provide environmental data. (See **Background** for details on reporting requirements).

An agreed set of environmental outcome metrics will help these firms gather comparable data from their supply chain, allowing them to track progress toward environmental objectives. Many supermarkets and food manufacturers are looking to support their supply chain in meeting environmental targets. An agreed set of outcomes would help to unlock and target this support.

Financial Institutions

Banks also have external environmental reporting requirements which may require working with farmers to collect environmental data. (See **Background** for details on reporting requirements).

Banks may need environmental data to assess agricultural loan risk as well as to develop financing schemes which would support or benefit farmers moving to low-emission and nature-positive practices. An agreed set of environmental outcome metrics would ensure that the private sector is aligned on the data being asked for, and that data will be comparable across farms within portfolios. This is important for banks that are seeking to measure Scope 3 emissions of clients within the food supply chain.

Furthermore, the upcoming UK Green Taxonomy will set out technical screening criteria for the agriculture sector to demonstrate their sustainability against robust, science-based definitions, to help enable access to finance earmarked for sustainable economic activities. Data access has been identified as a potential key challenge in reporting against the taxonomy. Setting out priority outcome metrics prior to the launch of the Taxonomy will aid financial institutions in developing a clear picture of the sustainability of their financed farms and report against emerging disclosure regimes.

Buyers of and Investors in Ecosystem Services

Buyers of and investors in ecosystem services require high-quality data on the outcomes of ecosystem services projects.

If the private sector and government are working to a common set of priority environmental outcomes from farms, then data collection costs can start to be shared, lowering project costs and increasing the profitability of payments for ecosystem services models.

Box 2: Global Farm Metric³⁸

Global Farm Metric

- ▶ The Global Farm Metric is a framework for measuring farm sustainability. The GFM consists of 12 sub-categories of metrics which cover environmental, economic and social dimensions of sustainability, with some 80 indicators. The metric was developed for farmers to measure sustainability themselves – without the need for external consultants or testing. NatWest and the Sustainable Food Trust have been collaborating for two years to develop the framework and ensure that it meets the data needs of the finance sector.

The aim of the Global Farm Metric is to become adopted globally, to aid governments as well as food and beverage manufacturing and retail sectors to have a common language with which to assess the sustainability of their partner farms.

NatWest is currently adopting the GFM framework to measure sustainability of the bank's agriculture portfolio and provide the bank's farmer clients with support to transition their farming practices to become more sustainable. The framework will, however remain open source which will allow farmers and land managers, as well as their supply chain and financial partners to utilize the framework when measuring their environmental outcomes.

³⁸ Global Farm Metric

Global Farm Metric Framework Categories	
<p>Nature</p> <ul style="list-style-type: none"> Farm biodiversity Farm habitats Air, soil & water quality 	<p>Farmers & Workers</p> <ul style="list-style-type: none"> Opportunities Health & Working Conditions Decision making
<p>Climate</p> <ul style="list-style-type: none"> Average conditions Extreme events 	<p>Crops & Pastures</p> <ul style="list-style-type: none"> Health Lifestyle Environmental Fit
<p>Water</p> <ul style="list-style-type: none"> Inputs Soil Holding Habitat Holding 	<p>Animals</p> <ul style="list-style-type: none"> Health & Welfare Lifecycle Environmental Fit
<p>Soil</p> <ul style="list-style-type: none"> Carbon sequestration & storage Health Conservation 	<p>Production</p> <ul style="list-style-type: none"> Yields Quality Diversity
<p>Nutrients</p> <ul style="list-style-type: none"> Inputs Balance Stocks 	<p>Economics</p> <ul style="list-style-type: none"> Economic Returns Resilience Ownership
<p>Resources</p> <ul style="list-style-type: none"> Other Inputs Infrastructure Energy & Steel 	<p>Community</p> <ul style="list-style-type: none"> Local Services Network Engagement

Table 5: GFM metrics³⁹

³⁹ Global Farm Metric

Box 3: Soil Association Exchange

Soil Association Exchange

- ▶ The Soil Association Exchange is an online platform developed by the Soil Association which will allow farmers to measure environmental outcomes on their farm. The Exchange also offers advisory services to help farmers improve their environmental outcomes, as well as guidance on public and private financing opportunities.

The Soil Association Exchange adopted the Global Farm Metric as a baseline on which to build their measurement protocol but streamlined the framework to improve usability.

The Exchange now uses six priority impact areas with 25 metrics to develop a holistic view of sustainability on farms. Farmers can choose to collect the data themselves or get the assistance of the Exchange's team of agronomists. This data can then be used by farmers to identify areas for improvement and for sharing with their supply chain or financial institutions. The service is free for farmers if they collect the data themselves, but thus far, all of the Exchange's farmer clients have paid to have agronomists visit and conduct data collection and assessments.

The Exchange was developed in collaboration with Lloyds Bank, M&S, Sainsburys, Arla, ABP Food, Compass, Food Buy, Riverford Organic and OMSCO, and is currently being piloted by those companies with farms within their lending portfolios and supply chains. Lloyds Bank is using Soil Association Exchange to provide the service to up to 1000 of its highest borrowing agriculture clients to measure their sustainability and help the farmers develop an action plan to improve the areas they wish to target.



Soil Association Exchange Outcome Areas	
<p>Healthy Soils</p>	<p>Soil Structure Soil Life Soil Chemistry Soil Physical Status Soil Organic Matter</p>
<p>Water</p>	<p>Surface Runoff Avoidance Nutrient Runoff Nitrate & Phosphorous Farm Balance Water Usage</p>
<p>Biodiversity</p>	<p>Woodland Connectivity Landcover Birds Insects Flora</p>
<p>Climate Change</p>	<p>Woodland Connectivity Landcover Birds Insects Flora</p>
<p>Social</p>	<p>Land Access</p>

Table 6: Soil Association Exchange Impact Areas⁴⁰

⁴⁰ Soil Association Exchange



International Government Baseline Programmes

Northern Ireland

The **Soil Nutrient Health Scheme**, launched in 2022 aims to undertake baseline soil sampling for all farms in Northern Ireland by 2026.⁴¹ Farmers who participate in the Scheme will be provided with:

1. Detailed information on the nutrient status of their soils
2. Runoff risk maps for nutrient loss to waterbodies for each field sampled
3. Estimates of carbon stored in their soils and as above ground biomass for each farm
4. Training on the interpretation of soil nutrient reports and generation of farm nutrient plans (provided by CAFRE)

The Scheme is funded by the Department of Agriculture, Environment and Rural Affairs (DAERA) and comes at a cost of £45 million and will test the majority of the 700,000 fields used for farming in Northern Ireland. By the 31 August 2022 cut-off, over 90% of eligible farmers had signed up to the Scheme.

Another option for Northern Ireland's farms to access baseline natural capital measurements beyond soil is through the **Environmental Farming Scheme** (EFS). The EFS pays farmers for carrying out environmentally beneficial farming practices over and above mandatory requirements. The Scheme has three levels: EFS (Wider), where actions have broad ecosystem benefits beyond the boundaries of the farm; ENF (Higher), where actions and benefits are site specific; and EFS (Group), where aggregated groups of farmers are paid to deliver environmental benefits.

Participation in the Scheme requires online training in environmentally-friendly practices, as well as engagement with a qualified EFS Planner who will complete site-specific Remedial Management Plans (ssRMP) for participating farms. The ssRMP will include a Farm Features Report, which is available via the EFS portal on the DAERA webpage. Up to 100% of the fee for the ssRMP can be recovered from DAERA pending certain conditions.

The EFS Planner must assess each field included in the EFS application using the relevant EFS Rapid Condition Assessment (RCA) and determine the EFS priority habitat type(s) present. The findings of the EFS RCA (which cover a range of attributes, for example vegetation height and herb/sedge cover) together with the farm features report information and Northern Ireland Environment Agency (NIEA) habitat data, are used to determine management solutions linked to EFS Remedial Management Options and NPIs for the habitat within the field.

To ensure the farmers get science-based, high quality advice, an EFS planner:

- must be the holder of a suitable qualification such as a Bachelor's degree in Environmental Science, Ecology or Biological Science or an equivalent deemed suitable by Teagasc and/or a member of a recognised environmental professional body or a Chartered Environmentalist as specified by the Society of the Environment;
- must be able to provide evidence of previous experience of developing habitat management plans; and
- must be able to provide evidence of previous experience of providing environmental advice and support to agricultural businesses in relation to land management.

Australia

The **Emissions Reduction Fund** (ERF) provides incentives for emissions reduction projects across the Australian economy.⁴² Eligible projects can earn Australian Carbon Credit Units (ACCUs) which represent one tonne of carbon dioxide equivalent emissions stored or avoided. The ACCUs can then be sold to government through a carbon abatement contract, or to private buyers in the secondary market.

A new pilot programme offers an advance of up to AUS\$5,000 worth of ACCUs to help with upfront costs of baseline soil sampling. Farmers would be required to undertake new land management activities to increase soil carbon and be willing to maintain stored carbon for at least 25 years to be eligible for the programme.

⁴¹ DAERA. Soil Nutrient Health Scheme Frequently Asked Questions

⁴² Australian Government Clean Energy Regulator Emissions Reduction Fund

⁴³ Origin Green Ireland

Another pilot programme, which closed at the end of 2022 supported farmers and land managers in accessing low-cost soil sampling and certified testing in exchange for sharing their data under the Pilot Soil Monitoring Incentives Program. The Australian Government partnered with Southern Cross University and scientific labs to offer a comprehensive suite of soil sampling and testing. Farmers were then connected with soil extension officers who would interpret sampling results and work with farmers to develop a plan to better manage their soils. Additionally, farmers could use their data for monitoring of ERF projects.

Ireland

Since 2011, the Origin Green programme in Ireland, in collaboration with Teagasc, has been undertaking carbon footprinting on Irish farms. The program began with beef farms and has to-date measured over 50,000 farms, accounting for 90% of Irish beef exports. The program then expanded to dairy farms and has footprinted 15,000 farms.

The Origin Green Programme utilises over 100 independent auditors who undertake approximately 650 weekly assessments to measure and monitor:

- Greenhouse Gas Emissions
- Biodiversity
- Water Use
- Energy Efficiency
- Soil Management
- Socio-economic factors
- Product quality

The data gathered through assessments are then used to develop a farmer feedback report which demonstrates how farm activities contribute to GHG emissions and contains advice on decreasing emissions through management practices and improving on-farm production efficiencies. Reassessments take place every 18 months to monitor progress.

