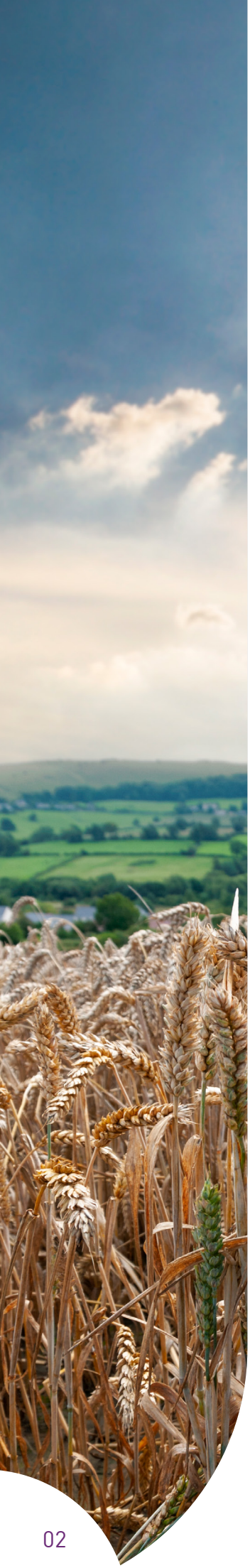
Agri-supply: An action plan for sustainable efficiency

Delivering a resilient UK agriculture and food system

aic
agricultural industries confederation



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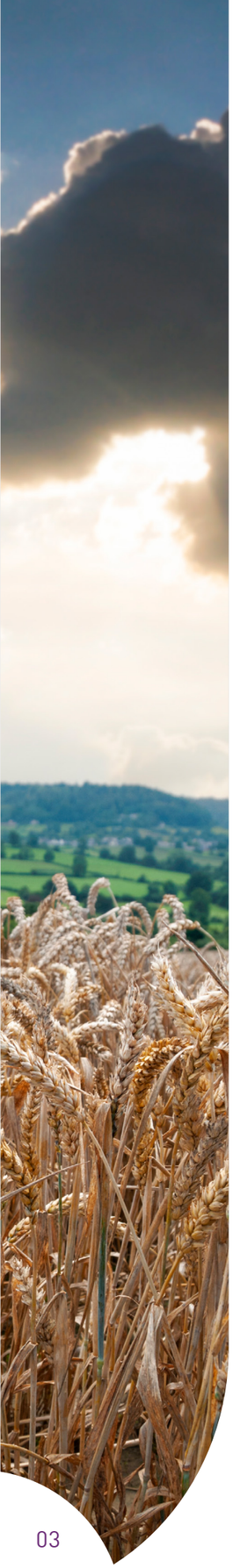

AIC's Sustainability Framework

Business Drivers

ECONOMIC RESILIENCE
Agility and adaptability will secure resilience.

- Data Technology & Systems
- Corporate Knowledge
- Access to Finance

NATURAL ENVIRONMENT
We should be a restorative industry.

- Climate Impact
- Biodiversity & Ecosystems
- Sustainable Raw Materials
- Natural Resources
- Re-purposing & Re-cycling

SUSTAINABLE COMMUNITIES
People are at the heart of everything we do.

- Health & Safety
- Human Rights
- Diversity, Equity & Inclusion

External Drivers

POLICY

- Incentive
- Regulation

MARKETPLACE

- Finance
- Value Chains

Foreword

> *We're delighted to share with you our action plan for delivering a resilient UK agriculture and food system.*

Robert Sheasby,
Chief Executive, AIC

I am proud to present AIC's Agri-supply: An action plan for sustainable efficiency which builds on our 2020 report, "Agri-supply roadmap for a sustainable food chain".

Since 2020, the imperative for sustainable practices throughout the food system has understandably intensified. Over the subsequent years, sustainability has seen considerable AIC Member and stakeholder interest, coupled with national and international policy development.

Driven by the climate and biodiversity crises, increasing consumer demand, advancing government policies, and the proactive commitments of individual businesses, the pace of change in our industry is rapidly accelerating.

Recognising these dynamic shifts, AIC has revisited and revised its original report to support its Members in navigating this landscape to deliver resilience in Member businesses, UK agriculture and the food system.

A recent survey of AIC Members highlighted the significant strides already being made in sustainability across the UK's agricultural supply industry – see the summary findings on page 66. These insights have informed this refreshed Action Plan, which provides clear, robust guidance and resources tailored to the needs of our Member businesses across the Animal Feed, Combinable Crops, Crop Protection and Agronomy, Fertiliser, and Seed sectors.

This Action Plan co-authored by AIC's Head of Sustainability, Vicky Robinson and Policy Manager, Andrew Pearson underscores our commitment to leading the industry towards a more sustainable future. It is a call to action, empowering our Members to thrive in a marketplace where sustainability is no longer optional, but essential.

Together, we will keep up the drive for positive change, ensuring that our industry – which forms the bedrock of our food system – remains resilient, responsible, and ready for whatever the future brings.

Foreword

Professor Tim Benton,
Distinguished Fellow, Chatham House

Environmental degradation – biodiversity loss, pollution, climate change – is increasingly challenging agriculture and food security. This challenge is threefold.

Firstly, changing weather is affecting farming businesses worldwide and requires adaptation to build resilience.

Secondly, to reduce these current and future risk requires becoming more sustainable today through reducing environmental impacts.

Thirdly, climate change, in combination with a more tense world geopolitically, is changing trade and market drivers, requiring agrifood businesses to be more agile, resilient, and sustainable.

"Sustainability" and "resilience" are therefore no longer buzz words but are increasingly measures of businesses ability to thrive in the decades ahead.

This Action Plan is therefore an important guide to address the existential challenge ahead.

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Executive summary

Agri-supply: An action plan for sustainable efficiency

Delivering a resilient UK agriculture and food system

Priorities

AIC is providing leadership

Members should:

- Use AIC's Sustainability Self-Assessment Framework to identify priorities and actions.
- Adopt sustainability metrics within operational activities.
- Apply circularity within production to maximise resource recovery.

AIC is encouraging collaboration

Members should:

- Share sustainability data with other value chain actors.
- Assess the environmental impact for all products.
- Support the development and implementation of innovations into sustainable technologies.

AIC is being an advocate

Members should:

- Communicate sustainable business values and culture.
- Promote metrics relating to sustainability.
- Utilise voluntary standards to complement regulatory requirements.

What is needed to facilitate these priorities?

1. Cross government strategies on land use, food and energy security.
2. Investment in innovative solutions and infrastructure in communities and services to deliver a green transition.
3. A standardised approach to sustainability data combined with simplifying and streamlining reporting.

Introduction

The world's population continues to grow and is expected to reach 10.4 billion in 2100[Ref 1], putting immense pressure on the world's resources. The sustainability of our agricultural systems is a critical component in addressing the global challenges of food security, environmental conservation, and ultimately economic stability.

The Food and Agricultural Organisation states that "Food security is closely linked to sustainability and is seen as one of the primary indicators of local, national and global sustainability[Ref 2]".

As the only industry that delivers nutritious food whilst sustaining and regenerating the environment which it depends on, agriculture is in a unique position.

The vital role of the Animal Feed, Combinable Crops, Crop Protection and Agronomy, Fertiliser, and Seed sectors within agriculture is sometimes missing in the wider "farm to fork" narrative but it is the bedrock of a thriving food system.

Structured alongside AIC's Sustainability Framework, the "Agri-supply Action Plan" provides clarity for Members and confidence to stakeholders which builds on AIC's 2020 "Agri-supply roadmap for a sustainable food chain".

This action plan is themed around the three pillars of sustainability – economic, environmental, and social – which are sub-divided into topics relevant to Member businesses. Each topic details the importance to individual businesses, where the sector is now, the external drivers and the ultimate destination alongside actions Members can undertake, irrespective of whether they are small, medium or large companies. It also articulates the challenges and enablers that AIC can assist with by providing leadership, advocacy, and encouraging collaboration.

Since 2020 the drivers for sustainability have accelerated, with the contributors in the value chain and finance industry advancing especially quickly. Coupled with individual business commitments and government policy, the pace of change can at times feel relentless. Research by the World Business Council for Sustainable Development (WBCSD) found that global ESG regulations have increased by 155% in the last 10 years and 647% since 2000 [Ref 3], a reflection on the focus this area now receives. This is precisely why AIC is calling for greater alignment. The actions in this report cover a range of scenarios for Member businesses to consider, backed by the enabling support that AIC provides.

AIC's "Agri-supply Sustainability Action Plan" also sets out the part we will play within the overall food system dovetailing with other roadmaps and action plans.

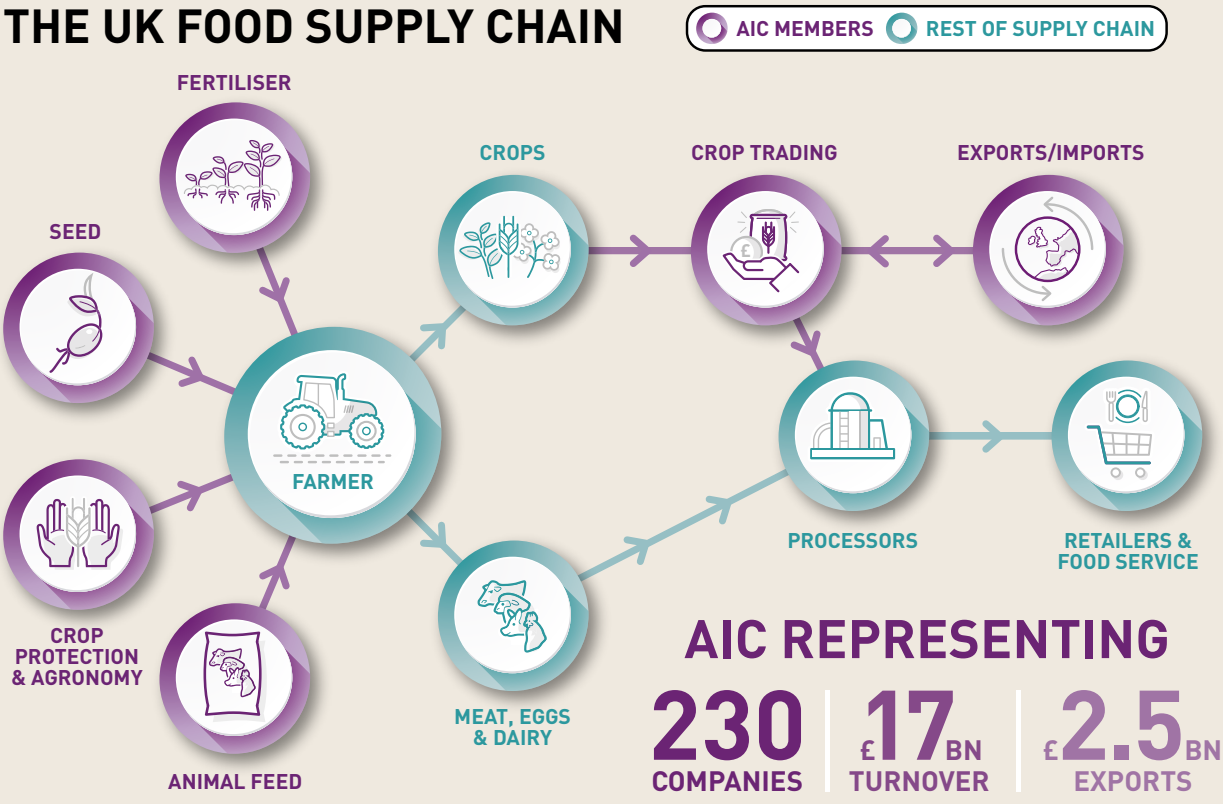
The future resilience and prosperity of the agri-supply sector depends upon a thriving and successful agricultural industry that works collaboratively to seize opportunities and work through challenges together.

About AIC

Formed in 2003 from the merger of three agricultural trade associations, the Agricultural Industries Confederation (AIC) represents businesses in five major sectors within the supply chains that feed the nation.

Our Member businesses supply UK farmers and growers with the animal feed, fertiliser, seed, crop protection products, trusted advice and quality services that are essential to producing food, as well as trading crops and commodities across the globe.

With over 230 Members representing £17.8 billion turnover at farmgate, AIC works on behalf of its Members providing leadership, advocacy and collaboration, delivering information, providing trade assurance schemes, and offering technical support.



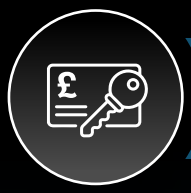
Economic Resilience

Agility and adaptability will secure resilience

The scope of this chapter identifies the impact of economic resilience for Member businesses, what the current situation is, and actions that Member businesses should undertake.

Data Technology & Systems

Corporate Knowledge



Access to Finance

What does it mean

The amount of data being collected by businesses is growing exponentially and there is an increasing demand for this data to be reported on, requiring systems to be in place to facilitate this.

Alongside the evolution of data, the workplace itself is evolving. The way individuals evaluate roles and companies is changing, and there's an emphasis on staff development, values and retention.

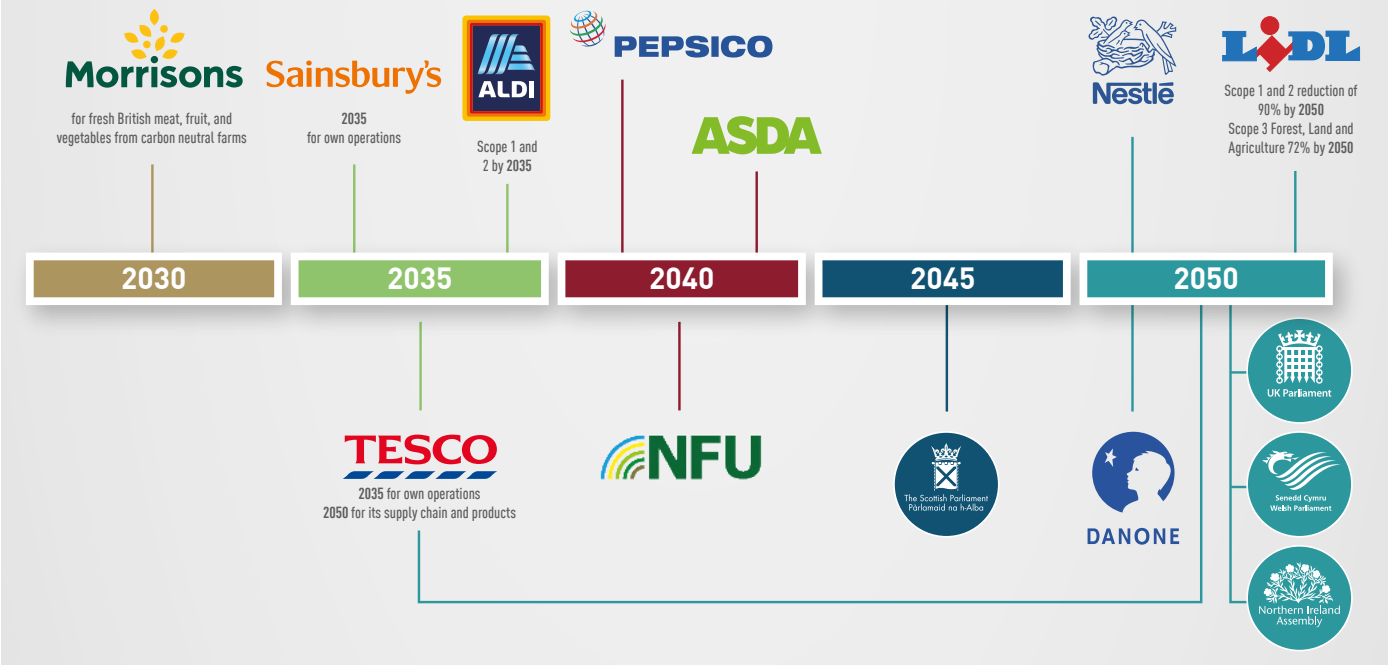
Sustainability reporting has become a critical element of corporate responsibility - promoting transparency, accountability, and responsible business practices. An increasing focus from the finance industry into these areas influences which businesses they work with, as well as their investment decisions, ultimately impacting on access to finance.

Benefits to Business

Data, technology and systems

Public and private sector bodies are increasingly making sustainability commitments, net zero being one of these, as shown below. It is data, reporting and systems that are providing the evidence for businesses compliance and assurance.

Net zero target by organisation



In turn this provides business benefits:

- Supports business decision-making to drive efficiency and opportunities, improving competitiveness.
- Allows businesses to gain customer insights.
- Enables more informed strategic planning.
- Ensures that businesses cannot be accused of greenwashing, as accurate data and transparent reporting systems can support their sustainability claims.

Corporate Knowledge

Retaining corporate knowledge in a more dynamic labour market is crucial for business resilience and enables:

- Business continuity, as critical information is retained and knowledge remains embedded within the organisation when employees move on or retire.
- The retention of an efficient and productive workforce who have experience of risks and opportunities and who can upskill new employees.
- Better risk management and more informed operational and strategic decision-making.
- Continuous learning and improvement based on accumulated knowledge, allowing businesses to identify gaps and look for opportunities to innovate.
- Compliance with regulations and industry standards.

Where are we now

- There are a range of sustainability reporting standards which apply globally, in the EU, and the UK as summarised on pages 14-17.
- In the area of corporate knowledge retention, we see from 2021 figures that the UK agri-food sector employed just under 4.2 million people (1 in 8 jobs in the UK). Ref 4
- Evidence on job tenure and employee loyalty shows that there are generational differences, however poor leadership, lack of opportunity and wages remain the key reasons why people move on.
- The BASIS, FACTS, and FAR professional registers play a key part in the training and development of employees in the agri-supply sector who advise on farm.
- AIC's Future Feed Forum is a small group of feed industry professionals under the age of 35. In 2024 they published a careers booklet highlighting the range of skills and qualifications needed for the feed industry.

Recognising that sustainability is becoming ever more important for customers, an increasing number of food and drink sector companies are committing to the Science Based Targets initiative (SBTi) : Ref 5

15 Members or Associates of AIC are among those who have committed to SBTi.

Destination

- Systems need to be configured to enable a compatible approach to the gathering and reporting of data to multiple sources, enabling consistent data to flow upstream and downstream through the food system.
- Robust compliance monitoring and assurance systems will continue to evolve to meet changing obligations.
- Develop strong company values and CPD; retain corporate knowledge through the implementation of internal processes and succession planning; and ensure continuous dialogue exists with customers.

Drivers

Policy

UK Government's Green Finance Strategy provides initiatives for farmers and land managers to access income streams through the private sector supported by the ability to measure and report environmental outcomes guided by nature investment standards.

In the EU, eligible companies are required to publish regular reports on their social and environmental risks as part of the Corporate Sustainability Reporting Directive (CSRD) from 2025.

Finance

There is an increase in finance institutions integrating the voluntary Taskforce for Climate Financial Disclosure (TCFD) and Taskforce for Nature Financial Disclosure (TNFD) into their credit life cycle.

The Science Based Target initiative (SBTi) states there are more than 80 financial institutions setting emissions targets and another 300 committing to do so. Ref 6

More than 100 financial institutions across a variety of sectors and countries have aligned themselves to the TNFD.[Ref 7]

Sustainability claims are an area in which the Competition and Markets Authority (CMA) and the Advertising Standards Authority (ASA) are becoming increasingly active to ensure greenwashing does not occur.

The EU is working on the detail of the Green Claims Directive which will ensure environmental labels and claims are credible and trustworthy. This is expected to be implemented by September 2026.

What are the actions for Member businesses

Data, Technology and Systems

To ensure seamless data reporting and compliance with legislation and standards, Member businesses can:

- Consider AIC's Sustainability Training for Board and Senior Managers delivered by SLR Consulting to identify sustainability priorities and KPIs for the business, what data will be required to report against them, and the systems that need to be in place.
- Complete AICs Sustainability Self-Assessment Framework to inform of areas of strength and areas that need action.
- Implement a sustainability management system which can be used to design, implement, and improve sustainability practices.
- Map reporting requirements, which legislation or standard they relate to, who manages them, the data required, and when this is required.
- Consider what systems are required to gather the data to meet the reporting requirements.
- Explore the potential for automation of data gathering using market produced platforms/tools.

Corporate Knowledge

To improve employee retention and retain valuable corporate knowledge, Member businesses can consider:

- Publishing company values and providing case studies on how they are demonstrated.
- Developing annual Personal Development Plans with individuals. Providing support and time for them to be completed, and supporting staff to be a member of, and remain on, professional registers.
- Considering a range of options for personal development including job shadowing and mentoring, covering both soft and technical skills.
- Developing internal shared systems to capture knowledge to support succession planning and staff turnover.
- Communicate openly with customers on sustainability commitments.

Access to Finance

To meet customer needs regarding reporting and standards, Member businesses can:

- Horizon scan for upcoming regulatory requirements.
- Increase awareness and understanding of the various voluntary standards for disclosure currently being implemented.
- Consider how to incorporate potential requests for information required by the disclosures into reporting processes.

Enablers

AIC can and does:

- Advocate to Government the need for a consistent approach to sustainability reporting.
- Encourage cross-industry collaboration on how data could be communicated in the supply chains.
- Consider the development of a database for regulatory and voluntary standards relevant to sustainability for UK agriculture.
- Use aggregated data from AICs Self-Assessment Framework for benchmarking and to identify areas where further support is needed.
- Continue to work with and across the professional registers to ensure that CPD is relevant, joined up, and complementary to equip employees with the skills and knowledge required by the industry.
- Signpost or provide information on future regulations and their impacts.
- Contribute to industry-wide initiatives that project agriculture as a viable and interesting career.
- Broaden the Future Feed Forum project to include all AIC sectors.
- Develop a sustainability module in farm trader and merchant training.

Standards and Regulatory Summary

There are an array of global sustainability standards and disclosures some of which are now being integrated with each other or into regulatory requirements. This list is not exhaustive.

Global Standards and Disclosures

International Sustainability Standards Board (ISSB)

- Launched at COP26 in Glasgow by the International Financial Reporting Standards Foundation (IFRS).
- Is a global standard setting body aiming to create a global baseline for sustainability disclosures.
- It published its first two standards the IFRS S1 (General Requirements for Disclosure of Sustainability-related Financial Information) and IFRS S2 (Climate-related Disclosures), in June 2023.

Task Force on Climate-Related Financial Disclosures (TCFD)

- Set up with the aim of improving and increasing the reporting of climate related financial information for financial markets.
- Encompasses governance, strategy, risk management, metrics and targets.
- Its recommendations have been widely adopted by organisations around the world.
- The Task Force was disbanded in November 2023 and has been integrated in the ISSB standards IRFS 1 and 2.

Sustainability Accounting Standards Board (SASB Standards)

- Agricultural products covered in one of their 77 industry-specific sustainability accounting standards to help businesses disclose financial impacts. Ref 8
- Maintained and enhanced by the ISSB.
- Play a crucial role in IFRS1 and 2 through the provision of industry-specific guidance to complement the general framework and specific requirements for climate related disclosures that IFRS1 and 2 provide.
- More than 3,200 companies use them. Ref 9

Task Force on Nature-Related Financial Disclosures (TNFD)

- A framework to support businesses in understanding and reporting their nature related dependencies, risks, impact and opportunities.
- Encompasses the same framework as TCFD.
- Developed the LEAP (Locate, Evaluate, Assess and Prepare) approach.
- By mid-2024 over 400 organisations globally had adopted TNFD recommendations. Ref 11

Global Reporting Initiative (GRI)

- An international independent standards organisation.
- Providing a framework for sustainability reporting.
- More than 14,000 GRI reporters in over 100 countries. Ref 10

The Greenhouse Gas Protocol (GHG Protocol)

- Framework for measuring and managing greenhouse gas emissions.
- Partnership development between the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBSCD).
- Provides standards and tools, training and resources.
- Used by many companies reporting to the Carbon Disclosure Project. Ref 12

CDP (formerly the Carbon Disclosure Project)

- A global disclosure system with three questionnaires on climate change, forests, and water security.
- Questionnaires are completed annually with responses scored from A to D and published.
- Working with over 10,000 companies and 1,000 cities.[Ref 13]
- Aligned with TCFD and GRI to help streamline reporting and ensure consistency in reporting.

Science Based Target initiative (SBTi)

- Helps companies set emissions reductions targets which have to include Scope 3.
- Aiming to limit global warming in line with the Paris Agreement of 'well below 2°C above pre-industrial levels and pursue efforts to limit warming to 1.5°C'.
- FLAG (Forest, Land and Agriculture) Guidance provides a framework for companies in land-intensive sectors with targets that include land-based emissions reductions and removals. Companies must set near-term (5-10 years) and long-term (by 2050) science-based targets for land-related emissions. They are also required to set zero deforestation targets by 2025.

Science Based Targets (SBT) for Nature

- Developed by the same consortia behind the SBTis.
- Aiming to set targets for the conservation and restoration of nature including biodiversity, land use, water consumption and waste management.
- Provides guidance and resources.

International Organisation for Standardisation (ISO)

- Several standards focusing on differing aspects of sustainability.
- For example, ISO 14001 which provides a framework for effective environmental management systems helping businesses improve their environmental performance and efficient use of resources.

B Corps

- A voluntary standard provided by B Lab for businesses to demonstrate they have a high standard of social and environmental performance, accountability and transparency.
- The assessment evaluates a company's impact on its workers, community, environment and customers.
- 2,000 businesses are now certified in the UK, an increase from 1,000 18 months ago.[Ref 14]
- The UK has the largest number of certified businesses behind the US and Canada.

Sedex Members Ethical Trade Audit (SMETA)

- A social audit methodology that assesses sites and examines working conditions in an organisation's supply chain.
- Covering labour standards, health and safety, business ethics and the environment.
- Helps businesses understand and improve their ethical, social and environmental performance.

Verra

- A set of guidelines and frameworks to support climate action and sustainable development projects.
- Designed to ensure projects achieve measurable, high integrity outcomes which provides confidence to buyers and sellers.
- Includes the Verified Carbon Standard (VCS) which is the most widely used greenhouse gas (GHG) crediting program in the world certifying projects that reduce or remove GHG emissions.
- Other standards cover plastic waste reduction, sustainable development, climate community and biodiversity.

Gold Standard Foundation

- Sets standards for climate and sustainable development projects ensuring projects deliver high-integrity outcomes and contribute to sustainable development goals.
- Provides certification that projects meet rigorous criteria for environmental and social benefits including greenhouse gas emission reduction, sustainable development and shared value with communities.
- Provides a framework for measuring the impact of climate actions.
- Backed by WWF and the Science Based Target initiative.

Corporate Sustainability Reporting Directive (CSRD)

- Mandates eligible European companies to disclose information on their sustainability efforts and impacts starting from this year. This includes Non-EU companies with a net turnover of more than €150 million in the EU and at least one subsidiary or branch in the EU.
- It aligns with the EU's Green Deal and Sustainable Finance Disclosure Regulation (SFDR).
- CSRD integrates TCFD climate focus and ISSB standards but does have higher requirements in some areas e.g. Scope 3 emissions.
- It includes addressing issues related to modern slavery and ensuring due diligence to identify, prevent, mitigate, and account for sustainability impacts in operations and supply chains.

European Sustainability Reporting Standards (ESRS)

- These standards provide detailed requirements for companies to report on environmental, social, and governance (ESG) issues.
- They align with global standards to ensure interoperability and reduce the reporting burden on companies.
- They are integrated in the CSRD framework and provide the tools and methodologies for companies to comply with the CSRD reporting requirements.

Sustainable Finance Disclosure Regulation (SFDR)

- Requires financial market participants and financial advisers to disclose how they integrate ESG factors into their investment decisions and advice.
- It aims to increase transparency and prevent greenwashing.

Corporate Sustainability Due Diligence Directive (CSDDD)

- Provides a legal framework for responsible corporate behaviours, primarily focusing on environmental and human rights impacts.
- Mandates eligible companies and those within their supply chains to prevent, cease, or alleviate their negative influence on human rights and the environment. Slavery, child labour, labour exploitation, biodiversity depletion, pollution and the degradation of natural resources are all in scope.
- Member States will be required to implement it within three years of publication (5th July 2024).
- Eligible businesses include those non-EU companies with a defined turnover in the EU and eligibility differs between this and CSRD.

European Union Deforestation Regulation

- There must be proof provided by the entity placing the product on the EU market that eligible products do not originate from recently deforested land or have contributed to forest degradation.
- Eligible products must also be covered by a due diligence statement and be produced in accordance with applicable local laws.
- Incorporates social requirements, for example labour rights and human rights.

British Standard Institute (BSI)

- Supports sustainability reporting through various standards and guidance. For example, guidance on ESG reporting released July 2024 to help businesses navigate the often-complex landscape of ESG reporting.
- Offers assurance services to ensure disclosures are accurate and reliable.

UK Sustainability Disclosure Standards (UK SDS)

- Being developed by the Department for Business and Trade.
- Based on the IFRS Sustainability Disclosure Standards setting out corporate disclosures related to sustainability risks and opportunities that companies face.

Food Data Transparency Partnership (FDTP)

- Partnership between the Department for Health and Social Care (DHSC), the Department for Environment, Food and Rural Affairs (Defra), the Food Standards Agency (FSA) and more widely industry, researchers and civil society.
- Focused on how to deliver consistent, accurate and accessible environmental impact data for the agri-food system to deliver a common approach to communicating the environmental impacts of food and drink products and businesses through a standardised approach starting with Scope 3 emissions.
- Underpinning this is the need for accurate data with a recognition of the need for continuous improvement in the accuracy, consistency and an infrastructure to enable accessible impact data.

Natural Environment

We should be a restorative industry

The scope of this chapter identifies the impact of climate on Member businesses, what the current situation is, and actions that Member businesses should undertake.

Climate Impact

What does it mean

Greenhouse gases are gases in the atmosphere that raise the surface temperature of the planet through their ability to absorb specific wavelengths of radiation emitted by the planet resulting in the greenhouse gas effect. Limiting the greenhouse gas effect is significant in maintaining a habitable temperature on earth. However, excessive emissions of greenhouse gases, mainly caused by the burning of fossil fuels, results in global warming, climate change and an array of associated environmental and agricultural impacts.

- **The UK has made significant cuts to greenhouse gas emissions since 1990 – emissions have so far fallen 46% from 1990 levels.** Ref 15
- **Even with very ambitious actions to reduce greenhouse gas emissions globally, further climate change is inevitable.**
- **Agricultural emissions are impossible to eliminate entirely due to the intrinsic biological link with food production.**
- **The Climate Change Committee accept they should be viewed in the context of land use change and carbon capture.** Ref 16

Why does it matter

The Met. Office predicts that the UK is expected to experience warmer, wetter winters and hotter, drier summers as weather systems are altered by changes to our climate. More of the rain in summer is expected to come from short lived high intensity showers and the chance of extreme maximum daily temperatures will increase. A decrease in soil moisture during summers is projected, consistent with the reductions in summer rainfall. Sea levels will also continue rising. Risks to soils from changing climatic conditions include seasonal aridity and wetness, as well as there being an increased risk from pests, pathogens and invasive non-native species threatening productivity.

Businesses need to consider which parts of their operations are affected by different risks, such as reduced water supply impacting production and flooding or overheating affecting employee productivity. They can then develop measures to manage risks, such as protecting their premises from flooding, and assess over time whether these measures are effective. The Environment Agency now includes climate related risk assessments in implementing the Environmental Permitting Regulations.

Where are we now

Business

- The starting point for businesses in relation to the decarbonisation of their operations is to take an "analyse - plan - act" approach to the issue through quantifying the carbon footprint of the business.
- AICs Sustainability Self-Assessment Framework for Member Businesses includes indicators related to minimising carbon emissions and reducing their impact on climate change.
- Reducing Scope 1 and 2 emissions is crucial for companies aiming to enhance sustainability and combat climate change.
- Scope 3 emissions refer to indirect emissions that occur in an organisation's value chain, both upstream and downstream. Managing Scope 3 emissions effectively involves strategic planning, data collection, and collaboration across the value chain.
- In reporting carbon emissions, organisations are promoting transparency and accountability for their actions and a commitment to their share of mitigating climate change. Carbon reporting reveals opportunities to reduce emissions and mitigate climate risks.

Social

- Intergovernmental Panel on Climate Change (IPCC) standard methodology exists for all carbon footprint calculations and any market assurance and verification required is available through auditing bodies.
- Tools vary and greater transparency around how data is presented and used has been called for by AIC Members and others in the food system.
- The Food Data Transparency Partnership, of which AIC is a member, is focussed on streamlining the measurement and communication of environmental impact data for food and drink starting with Scope 3 emissions by standardising the methodology and data sources used for measuring greenhouse gas emissions (GHG). This includes considering how primary data can be collected at farm level and communicated within the supply chain.
- Product carbon footprinting provides a holistic view of the carbon impact of a product throughout its production lifecycle.
    - The feed sector is working on an approach whereby the carbon footprint of branded feed will be included in the Global Feed Life Cycle Assessment Institute (GFLI) database.
    - A nascent market is developing in the fertiliser sector whereby fertilisers are considered based on their carbon values using accredited carbon auditors to verify their product claims.

Processing & Production

- All sectors of the agri-supply industry have taken steps to understand their carbon footprint and make changes to their operations.
- Primary manufacture of nitrogen fertiliser is carbon intensive. Fertilizers Europe have set out an ambition to deliver 70% greenhouse gas emission reduction by 2040, and to be climate neutral by 2050. [Ref 36] Alternative production technologies to reduce GHG emissions are being developed at a rapid rate:
    - Capturing and storing CO2 generated in the production process.
    - CO2 is being reduced by replacing natural gas with green hydrogen produced via electrolysis or alternative sources of hydrogen.
    - Production with biomethane or biogas.
    - Further development of products combining mineral and organic resources.
    - AIC Members are also providing products and services aimed at reducing emissions arising from in-field applications of inorganic nitrogen fertiliser.

- The UK feed sector has already made the investments needed to become energy efficient as evidenced by comparing UK energy consumption per tonne of feed with figures published in Decarbonising the European food and drink manufacturing sector. [Ref 18] AIC has called for future gains to be based upon carbon to account for a business's own generation or use of alternative energy sources.
- Climate Change Agreements (CCA) have supported emissions reductions through energy efficiencies in feed mills with the sector delivering a 11.96% reduction against a target of 7.4% during Target Period 4 and a further 2.58% reductions in the current target period. [Ref 19]
- Regional emissions from biofuel cultivation (NUTS2) in compliance with the Renewable Energy Directive (REDII) provides regional level data for the emissions of crops going into biofuel. The data has been updated in 2024.

Logistics and Storage

- Heavy goods vehicles contributed 20% of all domestic transport CO_2 emissions in the UK in 2021 [Ref 20] with the Government aiming for all new HGVs sold to be zero emission at exhaust by 2040.
- Although there is still some way to go before electric, battery or hydrogen fuel cell HGVs can deliver the practicality of a diesel HGV, the availability of zero exhaust emission HGVs is growing with a variety of vehicles up to 44 tonnes available today. [Ref 21]
- A sizeable contributor to many businesses' carbon footprints depend upon the efficiency and optimisation of delivery routes. Ever-improving Artificial Intelligence is making this much easier and more effective.
- More efficient warehouse management is helping shrink carbon emissions including:
    - Energy-efficient LED warehouse lighting linked with motion sensors.
    - The use of a green electricity supply, either from power suppliers or opting for onsite generation, alongside efficient insulation.
    - Electric pallet trucks, stackers and forklifts are now commonplace in warehousing.

Circular Economy

- Recycling materials for use in new products forms a key part of the circular economy and is being pursued in relation to nutrient recovery and carbon reduction, particularly in the fertiliser and animal feed sector's.

Adviser & farmer partnerships

- AIC Members continue to advocate the advice and actions jointly agreed by the Agriculture and Land Use Alliance. This focuses on soil, crop and animal nutrition, health, breeding and circularity to deliver the greenhouse gas savings called for by both policy and the market.
- To avoid carbon being lost from the agricultural sector's share of the climate change effort, our Members are working with their farmer clients to reduce emissions and sequester carbon within their own supply chains over the longer term.
- The feed sector is leading research to provide innovative solutions to help further mitigate methane emissions in cattle farming and also to improve Nitrogen Use Efficiency (NUE) and nitrogen lost in manures to the atmosphere.
- In parallel, the fertiliser sector is in a transformative phase, investing in new products and services which will support NUE and the Net Zero transition.
- Processors and buyers are increasingly asking for the completion of farm business carbon assessments and product footprints as part of their environmental obligations and in some cases these are becoming mandatory conditions of purchase.

Facts

MOST DOMESTIC FREIGHT IS MOVED BY VEHICLES ON OUR ROADS WHICH, IN 2022, ENTAILED APPROXIMATELY

156 million

HGV JOURNEYS COVERING ALMOST 20 BILLION KILOMETRES.

HEAVY GOODS VEHICLES (HGVS) CONTRIBUTED

20%

OF ALL DOMESTIC TRANSPORT CO_2 EMISSIONS IN THE UK IN 2021. [Ref 20]

Destination

- To contribute to meeting the target to reduce net greenhouse gas emissions by 100% (net zero) by 2050 relative to 1990 levels in England, Wales and Northern Ireland and by 2045 in Scotland.
- An interim target for England, Wales and Northern Ireland of reaching a reduction in emissions from 1990 levels of at least 68% by 2030.
- We are aiming to reduce production related carbon emissions of fertilisers and animal feeds by at least 80% - 100% by 2050. [Ref 59]

Policy and Marketplace Drivers

Carbon

The UK Climate Change Act 2008 informs Government's current Carbon Budget Delivery Plan and includes 32 quantified and 27 unquantified proposals and policies that relate to agriculture; Land Use, Land Use Change and Forestry (LULUCF). There are three main quantified proposals that are forecast to deliver approximately 60% of this sector's emissions reductions: [Ref 22]

- **Use of methane suppressing feed products.**
- **Multi-purpose breeds or multi-use cows.**
- **Improved farm fuel and energy efficiency.**

The Committee on Climate Change (CCC) have also provided in-depth advice on UK agricultural and land use policies in their report "Land use: Policies for a Net Zero UK".

Transport

Government has confirmed its intentions to end the sale of new, non-zero emission HGVs less than or equal to 26 tonnes from 2035.

From 2040, all new HGVs must be fully zero emission at the exhaust. [Ref 23]

Low carbon fuels incorporating biofuels have a significant role to play in reducing carbon emissions from existing vehicles.

Route to market

Banks which lend to farmers are reporting on their financed emissions and impacts on nature.

Food and drink businesses will need to report on the impact of their supply chains on carbon and the environment.

Banks are offering the following to aid the farming transition:

- **Green loans.**
- **Green funds.**
- **Discounted loan facilities.**

The value chain is seeking to support farmers by paying premiums for agreed actions.

Facts

IN 2021, AGRICULTURE AND OTHER LAND USE EMISSIONS WERE AROUND 49 MTCO$_2$e MAKING UP AROUND

11%

OF TOTAL UK NET GREENHOUSE GAS EMISSIONS.

Ref 24

AGRICULTURE AND OTHER LAND USE EMISSIONS HAVE DECREASED BY

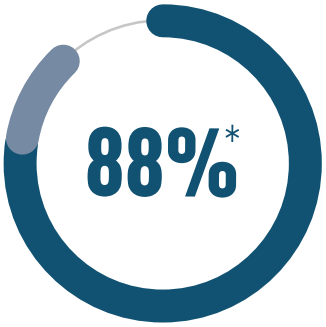
2% SINCE 2019.

AND

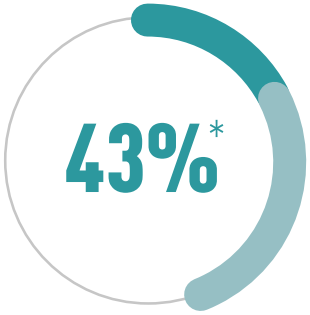
25% SINCE 1990. [Ref 24]

AIC Member Sustainability Survey

ARE YOU CALCULATING YOUR SCOPE 1 AND SCOPE 2 EMISSIONS AT A **BUSINESS LEVEL?**

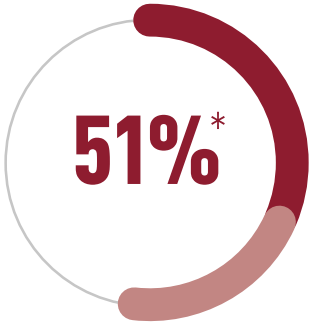


ARE YOU CALCULATING YOUR SCOPE 1 AND SCOPE 2 EMISSIONS AT AN **INDIVIDUAL PRODUCT LEVEL?**



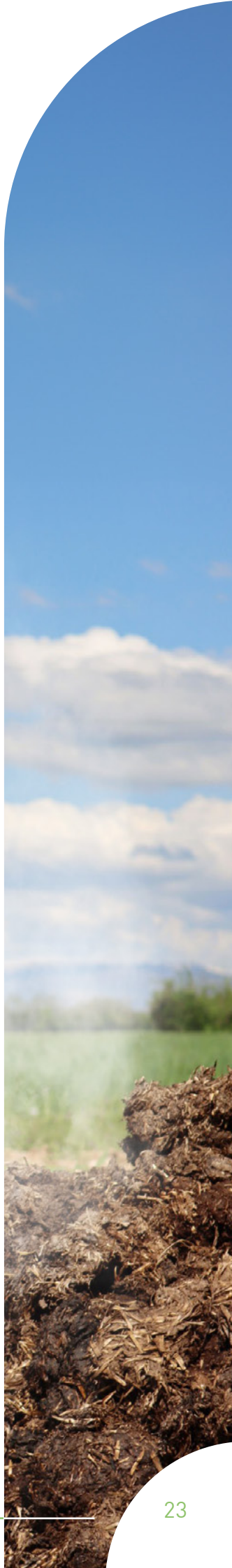
HAVE YOU SOUGHT SCOPE 3 EMISSION DATA FROM YOUR SUPPLIERS AT A **PRODUCT LEVEL?**

HAVE YOU PROVIDED SCOPE 3 EMISSION DATA **TO YOUR CUSTOMERS?**



IF YOU ARE CALCULATING SCOPE 1-3 DATA, HAS ANY OF IT BEEN VALIDATED WITH A **THIRD PARTY?**

Source: AIC survey 2024, 51 respondents. *Combined Yes and Partially



What are the actions for Member businesses

	Actions
Business	Plan to continually improve Scope 1 and 2 carbon emissions and communicate Scope 3 emissions and reductions. Develop and implement a carbon emissions management plan. Report carbon emissions in accordance with any regulatory reporting requirements as well as progress made against any voluntary targets and commitments. Assess what climate change adaptations their businesses will require in the future and develop a plan that will deliver these.
Social	Use recognised sector approaches to claim improvements in carbon footprinting of products.
Processing & Production	Continue to engage with AIC to provide insight on the impacts EU and UK Carbon Border Adjustment Mechanism (CBAM) will have on their businesses. Continue to work to decarbonise business operations, replacing plant with low carbon energy sources or energy efficient options when they come to the end of their life. Develop and offer seed varieties that are more resilient to extreme and variable growing conditions.
Logistics & Storage	Take advantage of feasibility pilots and associated funding as they become available as part of the Government's low carbon transport strategy to move to low carbon solutions for HGVs and other fleet. To continue the emission reduction trajectory through the adoption of new technology as it comes to market e.g. renewable energy heating, lighting and refrigeration across all premises.
Circular Economy	Look for opportunities to utilise recovered/recycled materials within products to reduce energy demands/use from primary production processes. Provide evidence to demonstrate reductions in carbon emissions in the manufacturing processes at a product level through the utilisation of circular economy processes.
Adviser & Farmer Partnerships	Maximising the greenhouse gas emission performance of farm inputs to support farmer clients to lower the carbon footprint of their products and for Members themselves to lower their Scope 3 emissions. Set on farm targets for activity change with clients, combining the product offering with advice on efficient use to achieve an improved 'Product' plus 'Use' footprint.

What are the challenges/enablers – how can AIC help?

Challenge	Enabler
All Member businesses able to calculate their Scope 1 and 2 emissions and know their organisations carbon footprint, which they are actively working to reduce.	Update Members on policy developments and resources in relation to Scope 1 and 2 emissions and carbon reporting. Influence Food Data Transparency Partnership (FDTP) and Scope 3 Food and Drink sector emissions (i.e. farming emissions) to ensure approaches accurately reflect AIC Members' actions. Work with allied bodies to widen the scope for financial support to all systems which can verify carbon emissions reduction.
Members being prepared to engage with their supply chain partners so as to have clear dialogue on Scope 3 emissions priorities and metrics up and down the supply chain.	Lobby for Member activities upstream of the farm gate to be included within WRAPs revised Scope 3 protocols guidance so that carbon reporting in the food supply chain is comprehensive and consistent.
CBAM drives a distributional issue through the Fertiliser sector depending on whether you are a UK producer or importer. For feed mills, the availability of energy efficient equipment and extended lead times result in significant delays in delivering plant investment projects. The sector is also seeing any development projects for increasing the use of renewables delayed by planning and network connection difficulties. Customers of the seed sector are not driving the demand for more climate resilient varieties to make the research and development funding and time required to develop climate resistant varieties, more efficient at nutrient recovery, viable at this time.	Continue to work with Members to influence the future direction of CBAM, Energy Trading Scheme (ETS) and Climate Change Agreements (CCAs) so that there is a safe and stable transition to decarbonisation. To lobby to have power generated from onsite renewables or green energy to be recognised in future CCAs and for targets to be based on carbon savings not simply on energy efficiency. Identify and signpost to alternative funding opportunities to drive forward research for climate resistant crop varieties. Advocate for the expansion of NUTS2 to cover a wider range of UK crops
The availability of electric vehicles (EV) chargers and the driveable range associated with EVs make it an imperfect match for long distance haulage. Limited infrastructure for rural situations. Last mile logistics are not an option for bulk deliveries and many other inputs onto farm.	Signpost to technological developments and opportunities to participate in pilot studies and access available funding as national policy and infrastructure in this area develops. Help Trade Assurance Scheme for Combinable Crops (TASSC) Participants in a pre-competitive way to decarbonise fleets and logistics operations – rural proofing their businesses whilst wider infrastructure projects are rolled-out.
Securing a continuous supply of adequate material will be a major priority given the competition for these materials from fertiliser, animal feed, biogas and bio-fuel sectors.	Continue to advocate for the use of co-products that achieve reductions in greenhouse gases rather than them being used to generate energy through anaerobic digestion.
Greenhouse gas emissions assessment and carbon removals are an ever-evolving science – frequent changes in the IPCC guidance and emissions factors over time. Demands of industry and farmers to incorporate new technologies and practices into the calculators.	Ensure that Members are aware of work that results in the update and alignment of key carbon calculators to new science and guidance. Work with providers of carbon calculator tools to ensure that UK activity data and data for farm inputs is as representative of the agri-supply industry as possible.

Natural Environment

Biodiversity and Ecosystems

The scope of this chapter identifies the impact of biodiversity and ecosystem change for Member businesses, what the current situation is, and actions that Member businesses should undertake.

What does it mean

Biodiversity is the variety of life on earth encompassing all living things. It can be considered at genetic level through species diversity – the count of different species within a given area; or as ecosystem diversity – the range of ecosystems and habitats.

Agriculture and nature depends upon reversing the decline in habitats and species throughout the UK.

Forests host around 80% of the world's wildlife on land and are home to many species found nowhere else. In the last 60 years, more than half of tropical forests worldwide have been destroyed. [Ref 25]

Why does it matter

- **Biodiversity is essential for the processes that support all living things. Without a wide range of animals, plants and microorganisms, we cannot have the healthy ecosystems that we rely on to provide us with the air we breathe, food, water, fuel, medicines and wellbeing.**
- **Since the early 1990's agriculture has become increasingly adaptive in playing its part to bring about solutions to declining biodiversity. With research and industry investment, hand in hand with positive environmental practices, changes in attitude and delivery on farms has occurred.**
- **The agricultural industry has a key role in contributing to meeting the UK Government's commitments and contributions to international effort, and recognises that more still needs to be done at home and overseas, to manage land optimally.**
- **Products such as soya, cattle and palm oil have been identified as some of the key global drivers of deforestation. Protecting forests is critical in halting the loss of global biodiversity and protecting the rights and livelihoods of indigenous communities and forest peoples, as well as serving the economy and meeting global climate change commitments.**

Where are we now

UK agri-environment policies will contribute to delivering the 2021 Environment Act biodiversity targets recognising the pivotal role that farmers, land managers and their advisers will play in halting the decline of species by 2030.

With 70% of our land being managed for agriculture there is great potential for enhancing biodiversity. [Ref 26]

New farming incentive schemes in England are expected to:

- **Contribute at least 50% of the target of bringing protected sites into favourable condition by 2042.**
- **Contribute 80 to 100% of the target to restore or create more than 500,000 hectares of wildlife-rich habitat outside of protected areas by 2042, by including the contribution from peat restoration and biodiverse woodland creation.**
- **Support 65 to 80% of landowners and farmers to adopt nature friendly farming on at least 10-15% of their land by 2030.**
- **Support farmers to create or restore 30,000 miles of hedgerows a year by 2037 and 45,000 miles of hedgerows a year by 2050, returning hedgerow lengths in England to 10% above the 1984 peak (360,000 miles).** [Ref 27]

Members of the professional registers: BASIS, FACTS and FAR provide holistic advice that benefits both the farm business and the wider environment to support the delivery of these ambitions. In addition, many also have employees on the BASIS Environmetal Advisers Register, recognising those accredited, trusted professionals who deliver specific environmental advice.

The Seed sector is central to advising on and supplying seed mixes to farm that provide the basis for many of the wildlife-based actions.

The Kunming-Montreal Global Biodiversity Framework includes the commitment of parties, including the UK, to reduce the overall risk from pesticides and from highly hazardous chemicals by at least half by 2030.

Member agronomists are providing farmers with Integrated Pest Management (IPM - see pages 46 - 47 for details) tools and strategies to minimise crop losses caused by insects, weeds and diseases to sustainably maximise production – allowing farmers to meet the increasing demand for food from the remaining land area.

Despite considerable efforts to halt deforestation through international environmental legislation and industry led schemes, the expansion of soya production, alongside cattle ranching and timber has continued to be a significant driver in the loss of native vegetation in South America. There are similar issues with palm oil production in southeast Asia, and the associated impacts on biodiversity, carbon emissions, water systems and local communities. [Ref 28]

The animal feed and UK livestock sectors have taken great strides to source sustainable soya and to reduce their reliance on imported soya. In the past ten years the British pig sector has halved its soya use. [Ref 29]

The Roundtable on Sustainable Soya was established in the UK in 2018 to provide UK industry with an open forum to work together towards a secure, resilient, supply of deforestation free sustainable soya to the UK. All stakeholders, including the soya importers and the feed industry are working to deliver a viable national transition plan towards vDCF (verified Deforestation and Conversion free) soya.

AIC Services operate the Roundtable on Sustainable Palm Oil (RSPO) Credit Scheme which was set up in response to market requirements from the Government and retailers who wish the UK to be able to demonstrate that palm oil is sourced from a sustainable supply chain.

Destination

- **A sustainable protein strategy for the UK with an ideal home produced and imported feed balance.**
- **To contribute to UK food security whilst supporting the global target of conserving or protecting at least 30% of global land, and 30% of global ocean by 2030; and the national target to halt the decline in species populations by 2030 and increase populations by at least 10% to exceed current levels by 2042.**

Drivers

Policy:

The UK Government is a signatory to over 30 environmental treaties representing over 90% of the world's forests.

In 2022 at the UN Nature Summit COP15 in Montreal an ambitious global biodiversity framework to halt and then reverse nature's decline both at home and abroad was agreed.

UK Government has implemented a range of policies to support their signatory including:

- **Biodiversity Net Gain.**
- **Incentive schemes:**
    - **England's Environmental Land Management scheme/Countryside Stewardship**
    - **Welsh Sustainable Farming Scheme**
    - **Scottish Agriculture and Rural Communities Bill**
    - **Northern Ireland's proposal to deliver 'benefits for Land, Livestock, Infrastructure and People'**
- **UK Forest Risk Commodity regulation is awaiting secondary legislation.**
- **EU Deforestation Regulation requires proof by the entity placing the product on the EU market that eligible products do not originate from recently deforested land or have contributed to forest degradation.**

Finance:

There are an increasing range of private sector opportunities for farmers and land managers to access new income streams to invest in their land management.

Government's refreshed Green Finance Strategy and its first Nature Markets Framework was published in March 2023 setting out actions government is taking to provide the clarity and ambition for the development of these markets.

The Taskforce on Nature Related Financial Disclosures (TNFD) is a global initiative that is working to deliver a comprehensive and rigorous reporting framework to support a shift in global financial flows towards nature-positive outcomes.

These intend to mitigate the industrial impacts on nature by encouraging comprehensive reporting of a business's environmental footprint and properly integrating nature-related considerations in their strategies.

Value Chain:

Signatories to the UK Soya Manifesto comprise the biggest UK grocery retailers, some of the largest meat producers and food service companies and brands who have committed to:

- **Setting a robust deforestation and conversion-free commitment.**
- **Asking direct suppliers to adopt the same commitment – and also require that of their suppliers.**
- **Writing Manifesto commitments into contracts and supporting suppliers to ensure targets are met.**
- **Publicly sharing details of their progress.**
- **Support improved reporting of soya coming into the UK.**

The WWF Basket was launched in November 2021 at COP26 with the aim to halve the environmental impact of UK baskets by 2030 through a range of outcomes and measures themed across seven priority areas. Seven major UK food retailers representing over 70% of the UK grocery market have committed to this which includes reporting against the measures on an annual basis. [Ref 30]

What are the actions for Member businesses

	Member Business Action	Challenge	AIC Enablers
Agri-environment schemes	Continually develop training and advice offers. Ensure that there is sufficient seed in the country for farmers to be able to deliver the actions under SFI and provide early warning to AIC on any seed shortages to enable communication with government.	The challenge for Members will be to explore opportunities for added value related to farm advice, including biodiversity and land use. All seed other than grasses are produced outside the UK. Difficulties arise when trying to import seed as a result of EU Exit still not trading freely.	Ensuring advice is integral to delivering policy outcomes and is formally recognised and incentivised. Continue to engage with Defra on the development and operation of the SFI scheme, including continuing to highlight where import trade is affected.
Integrated Pest Management	Continue to proactively engage, support and promote the Voluntary Initiative (VI) and its achievements.	Integrated pest management can be perceived as complex to apply fully, with a need to invest extra time in and seek professional advice.	Use AIC IPM infographics to help communications with farmers and stakeholders.
Nutrient Management	Roll out the latest FACTS knowledge to deliver improved Nitrogen Use Efficiency (NUE) and reduce ammonia and nitrous oxide emissions to air, and nitrate leaching to water.	There are multiple definitions of Nitrogen Use Efficiency being used, which is creating a barrier to advisers and farmers starting to measure it.	Work collaboratively to ensure that there is a common understanding of NUE. Ensure that FACTS and FAR advisers are recognised by policy makers and farmers for their proactive effort to encourage farmers to set targets for Nitrogen Use Efficiency and reduce ammonia losses.
Plant Breeding and Crop Protection	Continue to explore research and development opportunities for seed treatments as well as precision breeding to broaden the scope of crop varieties and to accelerate the delivery of special traits to market.	Legislation only allows seeds treated with plant protection products authorised for use in an EU or EEA Member State to be imported, marketed, and used in GB until 1 July 2027. Market access to allow the trading of gene edited commodities with trading partners including the devolved administrations and the EU.	Encourage plant protection product registrations, including those used as seed treatments through the streamlining of GB's plant protection product regulatory regime. Ensure market access for precision bred commodities.
Soya Manifesto	Work towards the Manifesto commitment of delivering 100% vDCF soya by the end of 2025.	Member businesses to prepare for implementation of the EUDR and the need to comply with the requirements as they are currently understood given the uncertainties.	AIC's development of a voluntary Sustainable Commodities Scheme which will help businesses demonstrate compliance with UK FRC regulation. AIC 's continued engagement with the supply chain to ensure that commitments by retailers and processors work for our Members.
Feed Sector	Support the development and implementation of innovations into sustainable technologies.	Lack of a regulatory enabling environment following the pausing of the reviews of the TSE Regulation and the Animal By-product (ABP) Regulation.	AIC continues to support discussion with UK authorities to bring forward legislation that will expand compliant feed sources.

Facts

POLLINATORS CONTRIBUTE THE EQUIVALENT OF MORE THAN

£500 million

A YEAR TO UK AGRICULTURE AND FOOD PRODUCTION BY IMPROVING CROP QUALITY AND QUANTITY. Ref 32

BIODIVERSITY LOSS POSES RISKS TO MORE THAN HALF OF THE WORLD'S TOTAL GDP, WHICH AMOUNTS TO

$44 trillion Ref 32

Soya meal

THE CO-PRODUCT FROM THE CRUSHING PROCESS USED TO PRODUCE OIL FOR HUMAN CONSUMPTION OR BIOFUEL.

Soya meal

HAS UNIQUE CHARACTERISTICS IN ITS AMINO ACID PROFILE, HIGH PROTEIN CONCENTRATION, NUTRIENT DENSITY AND EFFICIENT DIGESTIBILITY AS WELL AS BEING PALATABLE TO LIVESTOCK.

65.1%

OF THE SOYA IMPORTED INTO THE UK FOR ANIMAL FEED CAN BE VERIFIED DEFORESTATION AND CONVERSION FREE. Ref 16

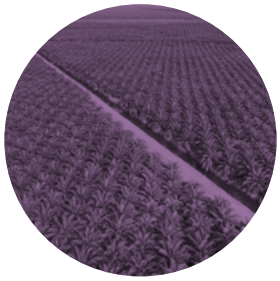
OF THE REMAINING

31.9%

CARRIES A LOW RISK.

3.0%

OF UK IMPORTED SOYA CARRIES A RISK OF DEFORESTATION. Ref 33



APPROXIMATELY

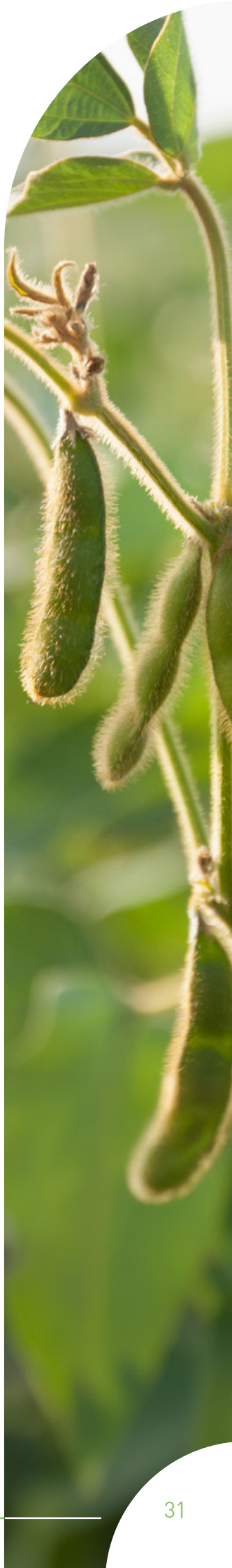
70 million tonnes

OF PALM OIL IS PRODUCED ANNUALLY.

OF WHICH

30,000 - 40,000 tonnes Ref 35

ARE PURCHASED BY THE UK ANIMAL FEED SECTOR. Ref 34



Natural Environment

Circular Economy

Sustainable Raw Materials

The scope of this chapter identifies the impact the circular economy has on the production of sustainable raw materials for Member businesses, what the current situation is, and actions that Member businesses should undertake.

What does it mean

Sustainable raw materials are those agricultural raw materials (commodities) grown and sourced for use for UK food, feed, fuel and fibre production, and for export. Applying a circular economy approach to agricultural inputs maximises the potential for closing the nutrient loop; minimising waste, optimising resources and contributing to the sustainability of raw material.

Why does it matter

- **The natural resources that we depend on for raw materials are vital and we therefore need to ensure that the sourcing and production methods enable their ongoing supply for future generations.**

Where are we now

AIC have developed a set of seven principles to inform the definition of sustainable feed which includes circularity of raw materials.

An objective of the European feed industry to increase resource efficiency remains fully valid within the circular economy context. Innovations in feed formulation, precision feeding and processing technology have been crucial assets in driving efforts towards net zero and other environmental improvements.

The Global Feed Life Cycle Assessment Institute (GFLI) gives feed companies the data to improve their formulation and sourcing, whilst retaining the required nutritional characteristics. AIC have produced a UK data sub-set to support our Members in developing their feed rations.

Co-products are an extremely valuable ingredient in feed rations – preventing waste through the re-use of products from food production and other processes. Using former foods for feed production is also known to save almost twice as much carbon compared with its use for energy production.

Circular economy practices also help to reduce the environmental impact of fertiliser production while also conserving resources and supporting sustainable agriculture.

By incorporating some by-products in their production processes from other processes, technologies, or waste streams from the food/farming sector, fertiliser production is in an innovative period.

The greatest scope for improved circularity lies in improving the efficiency of recovering nitrogen from organic materials - manures, sewage sludge, digestate etc.

The industry is investigating the potential for combining processed nutrients with mineral fertilisers. This includes AIC and Members exploring opportunities for further recovery of nutrients from UK sewage treatment works.

Agreeing metrics for both nitrogen and phosphorus use efficiencies has been a challenge shared by both the fertiliser and feed sectors.

The term Nitrogen Use Efficiency (NUE) is established in global academic research, with policy makers, and leading food chain players. Defra's Nutrient Management Expert Group (NMEG) has also recognised the role of NUE in its work and advice across various government departments. The challenge is to ensure consistency in the definition of NUE across the industry.

A CIEL report in 2023 quoted NUE as an established metric for livestock systems dovetailing into Crop Nutrient Management Guidance (RB209) uniting the effort in both crop and livestock systems. Ref 38

FACTS and FAR advisers are proactively driving the improvement of NUE on-farm having undertaken recent CPD training. This effort is expected to not only target the next phase in raising whole farm Nitrogen Use Efficiencies but also improved Farm Nutrient Balance – part of AIC's Roadmap and its associated campaign.

The value of professional advice is now recognised by funding farmers to take FACTS qualified advice for crop nutrient management planning in England's Sustainable Farming Incentive scheme.

Destination

- **To enable continued confidence in sourcing raw materials needed for fertiliser and animal feed so as to increase our resource efficiency by 30% by 2030, with a longer-term target of 40% by 2050.**

Drivers

Policy:

The Government's 2018 Resources and Waste Strategy focuses on preserving our stock of material resources by minimising waste, promoting resource efficiency and moving towards a circular economy.

In May 2024 the Nutrient Management Expert Group (NMEG) published their report on improving policy and practice for agricultural nutrient use and management, identifying the importance of nutrient management planning, as well as appreciating the role of the circular economy in recycling nutrients.

With concerns about water quality in Lough Neagh, the Department of Agriculture, Environment and Rural Affairs (DAERA) has committed to establishing and delivering a Livestock Dietary Emissions Challenge "to formulate and test on farm livestock diets to reduce ammonia emissions, phosphorus losses and greenhouse gases in dairy herds".

The River Wye action plan provides an indication of how government can address issues of declining river quality through a series of commitments aimed at reducing nutrients entering the environment.

The Sustainable Farming Incentive, as well as the devolved administrations' environmental schemes, promote the optimum use of fertilisers, improving farm nutrient balance with co-benefits to farm businesses and the environment.

Countries attending the 2022 Montreal Biodiversity COP 15 meeting agreed on a goal of reducing excess nutrients in the environment by 50%, and products containing nitrogen are at the centre of the effort.

Market:

Market volatility and increases in energy prices in late 2021, followed by the 2022 conflict in Ukraine, highlighted the need for sustainable supply routes and efficiency in the use of fertilisers. The conflict also impacted animal feed costs, as well as a broader rise in the global agricultural commodity prices, and subsequent challenges on global shipping.

Facts

OVER

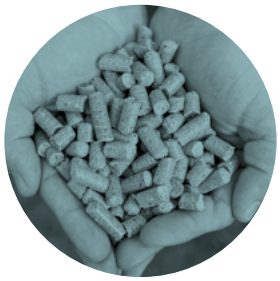
650,000 tonnes

OF FORMER FOODSTUFFS, THE EQUIVALENT OF 755,000 TONNES OF WHEAT WHICH WOULD NEED 92,000 HA TO GROW, ARE PROCESSED AND/OR HANDLED OR SENT DIRECT TO FARM EACH YEAR TO CREATE LIVESTOCK FEED WORTH £110 MILLION. Ref 39

UN RESEARCH CONCLUDED THAT HUMANS WOULD BE UNABLE TO DIGEST

86%

OF THE COMPONENTS OF ANIMAL FEED.



SOME

236kg of carbon dioxide

EQUIVALENT PER TONNE IS SAVED WHEN USING FORMER FOODSTUFF FOR LIVESTOCK FEED. Ref 41

71%

OF HOLDINGS WITH LIVESTOCK USE A RATION FORMULATION PROGRAMME OR NUTRITIONAL ADVICE. Ref 42

53%

OF FARMERS ARE CURRENTLY TAKING ACTION TO REDUCE GREENHOUSE GAS EMISSIONS FROM THEIR FARM. Ref 43

COLLECTIVELY THE BASIS, FACTS, AND FAR PROFESSIONAL REGISTERS HAVE OVER **8,000** advisers: Ref 44

BASIS Growing Professionally

>3,000

ADVISING ON

AGRONOMY

BASIS FACTS

>3,000

ADVISING ON

NUTRIENT MANAGEMENT

FAR aic Feed Adviser Register

>1,000

ADVISING ON

ANIMAL NUTRITION

BASIS Environment

Over 320

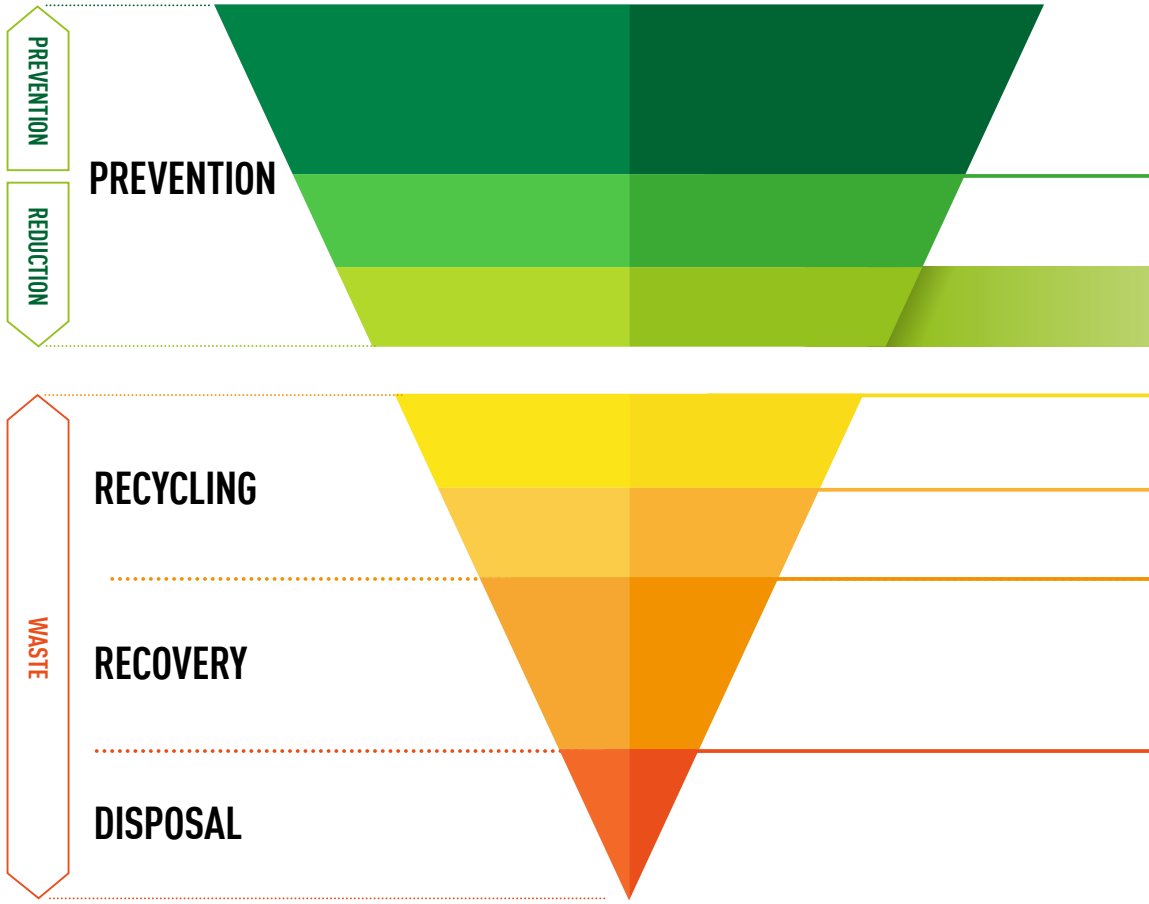
ADVISING ON

THE ENVIRONMENT

What are the actions for Member businesses

- Apply food and drink material hierarchy when considering use of 'waste' products.
- Aim to maximise recovery and efficiency of raw materials and products.
- Explore options for lowering overall emissions reduction and environmental impact from production through to product offer and services.
- The fertiliser sector to actively work with those developing methods to enable more efficient recycling and reuse of nutrients.
- Increase percentage of recycled nutrients in products.

Food and drink material hierarchy: [Ref 45]



Challenges

- Inter-sector and inter-industry competition for resources.

Enablers

- Work with the feed sector to incorporate home-grown branded feed and UK activity data into GFLI and farm carbon footprinting tools to ensure the tools reflect UK production methods and products used by UK farmers.
- Continue to work on an enabling regulatory environment to facilitate the safe introduction of novel proteins into the agri-supply sector.
- Continue to advocate for former foodstuffs to be exempted from any future UK Forest Risk Commodity legislation.
- Continue to work with the water industry and our fertiliser Members on the feasibility of incorporating recovered nutrients into fertiliser products in the UK.
- Collaborative working with industry stakeholders to ensure that Nutrient Management Guide (RB209) and Scotland's equivalent RB209 remains the comprehensive guide for crop nutrition.

MOST PREFERABLE OPTION

- Waste of raw materials, ingredients and product arising is reduced – measured in overall reduction in waste.

- Redistribution to people.
- Sent to animal feed.

- Waste sent to anaerobic digestion or
- Waste composted.

- Incineration of waste with energy recovery.

- Waste incinerated without energy recovery.
- Waste sent to landfill.
- Waste ingredient/product going to sewer.

LEAST PREFERABLE OPTION

- Consider how CPD can be increasingly complementary between BASIS, FACTS and FAR in recognition of the dependencies and synergies between the technical areas they cover and the need for a whole farm/system approach to management and actions.
- Work with stakeholders e.g. AHDB to consider how data on NUE could be gathered and shared to provide evidence on optimal nutrient use on farm, and demonstrate and share best practice.

Natural Environment

Regenerative Agriculture

Sustainable Raw Materials

The scope of this chapter identifies the impact of regenerative agriculture for Member businesses, what the current situation is, and actions that Member businesses should undertake.

What does it mean

Sustainable production of raw materials in agriculture are those agricultural raw materials (commodities) grown, and sourced for UK food, feed, fuel and fibre production, as well as for export.

UK and EU agricultural policy reflects the drive for sustainable land management – producing food and protecting the environment in tandem.

Why does it matter

- **UK agriculture needs to produce raw materials in a way that ensures their sourcing and production methods enable ongoing supply for future generations.**
- **Agriculture is in a unique position in that it can actively restore and improve the environment.**
- **There is an increase in focus within the value chain on the production of sustainable commodities.**

Where are we now

Downstream customers paying premiums for sustainably produced commodities, or providing other means of financial support and offering training to growers.

Favourable finance rates and term lengths for farmers who adopt sustainable practices.

Value of advice recognised in the funding available for nutrient and integrated pest management plans in England's Sustainable Farming Incentive scheme.

The BASIS Environmental Advisers Register provides an industry standard for environmental land management advice.

What is the destination

- **To enable the continued production and sourcing of the raw materials needed for food, feed, fuel and fibre production, as well as for export.**

Drivers

Policy:

Individual countries of the UK are developing their future agricultural and environmental policies. A common theme is ensuring agriculture becomes increasingly sustainable.

- **England has a seven-year transition period ending in 2028 during which there will be a phased movement of payments from the Basic Payment Scheme to public payments for public goods. The Environmental Land Management scheme (ELMs) will be the main Government funding available to farmers.**
- **Scotland has laid out a vision to become a global leader in sustainable and regenerative agriculture with their roadmap running from 2024 to 2032. A new framework for agricultural support will start in 2027 with the first changes coming in 2025 which will introduce new conditions to receive government support.**
- **Wales has delayed the introduction of the Sustainable Farming Scheme until 2026 due to the level of feedback following the 2024 consultation. The scheme will 'pay for farm practices that deliver outcomes which benefit Welsh society socially, economically, and environmentally'.**
- **Northern Ireland has a timeframe running from 2023 to 2026 which will 'deliver benefits for Land, Livestock, Infrastructure and People' to encourage industry development to become 'more productive, environmentally sustainable, resilient and integrated into an effective functioning supply chain helping the industry to contribute to the Climate Change Act (NQI) 2022'.**

The Genetic Technology (Precision Breeding) Act 2023 will quicken the rate at which plant breeders are able to produce varieties to address the challenges of climate change, human health and food security through higher yielding, and better quality crops.

Commodity crops used for biofuel under the Renewable Energy Directive have a carbon footprint (NUTS2) value attached to them to ensure the EU's efforts to reduce greenhouse gas emissions and promote sustainable energy sources.

Marketplace influence

An increasing number of retailers are partnering with UK farmers to trial regenerative and sustainable agriculture practices with crop rotations, soil health and tailored use of inputs, including soil and leaf testing for nitrogen, and variable seed rates.

The WWF Basket was launched in November 2021 at COP26 with the aim to halve the environmental impact of UK baskets by 2030 through a range of outcomes and measures themed across seven areas. Seven major UK food retailers representing over 70% of the UK grocery market have committed to this which includes reporting against the measures on an annual basis.[Ref 30]

The Sustainable Markets Initiative (SMI) 2022 report 'Scaling Regenerative Farming: An Action Plan' [Ref 46] was followed by their 2023 report; Scaling Regenerative Farming: Levers for implementation' [Ref 47]. Taskforce members range from across the food system from agri-supply through to processors and retailers.

At a global level 50 companies publicly support the potential of regenerative agriculture. [Ref 48] The 2024 AgFunderNews listed the agrifood companies who have made regenerative pledges. [Ref 49]

NatWest worked with WWF to produce research to back a call for government intervention to increase regenerative farming. [Ref 50]

What are the actions for Member businesses

- Assess the environmental impact of all products, for example through the calculation of product environmental footprints.
- Support UK agriculture, as appropriate to individual Member business priorities, to produce sustainable agricultural raw materials.
- Consider the added value of more joined up advice from across the full suite of professional registers.
- Supporting development and implementation in sustainable innovations.

What are the challenges

- Countering the perception that a regenerative or sustainable approach is about less or no inputs, rather than using them in a more effective or efficient manner.
- Unforeseen circumstances that changes to practice may have on the required specification of commodities e.g. sufficient protein for milling wheat.

What are the enablers AIC can provide

- Work with others in the industry to analyse data on uptake of farm support policies to identify where there may be adverse impacts on productivity.
- Facilitate a discussion on how to address any evidence gaps on the impact of regenerative practices.
- Keep Members up to date with the latest drivers and commitments of value chain actors.

Facts

72%

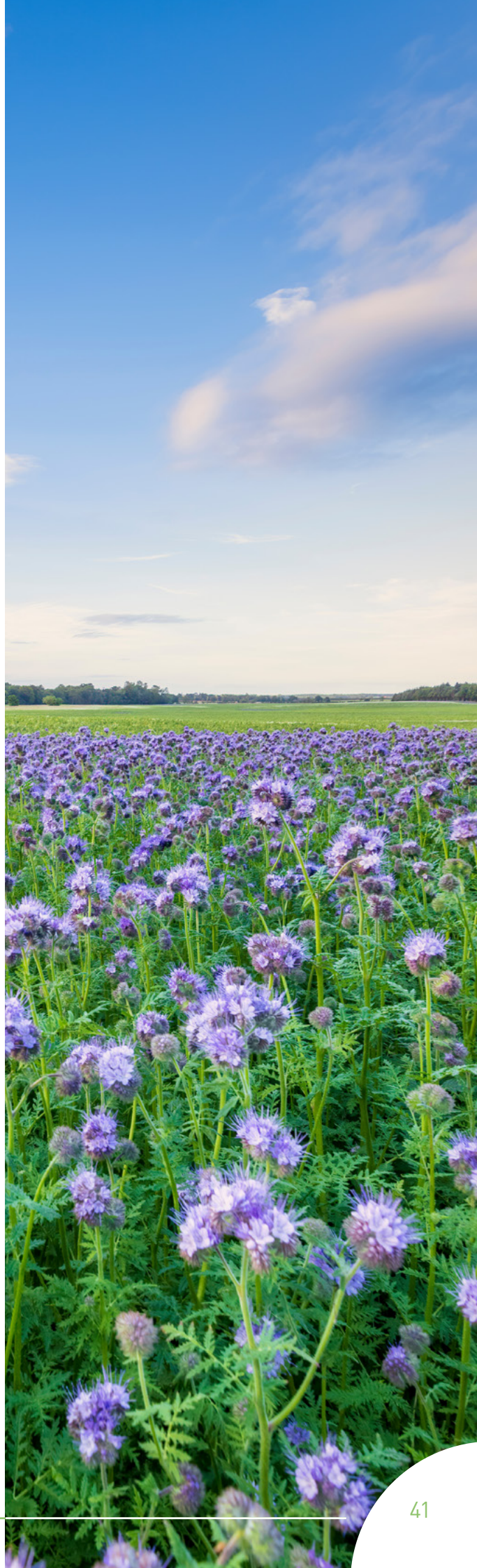
OF FARMERS USE A NUTRIENT MANAGEMENT PLAN CREATED WITH/BY AN ADVISER. Ref 71

81-88%

OF ARABLE FARMERS TAKE PROFESSIONAL ADVICE FROM A CROP PROTECTION AGRONOMIST. Ref 51

71% Ref 42

OF HOLDINGS WITH LIVESTOCK USE A RATION FORMULATION PROGRAMME OR NUTRITIONAL ADVICE.



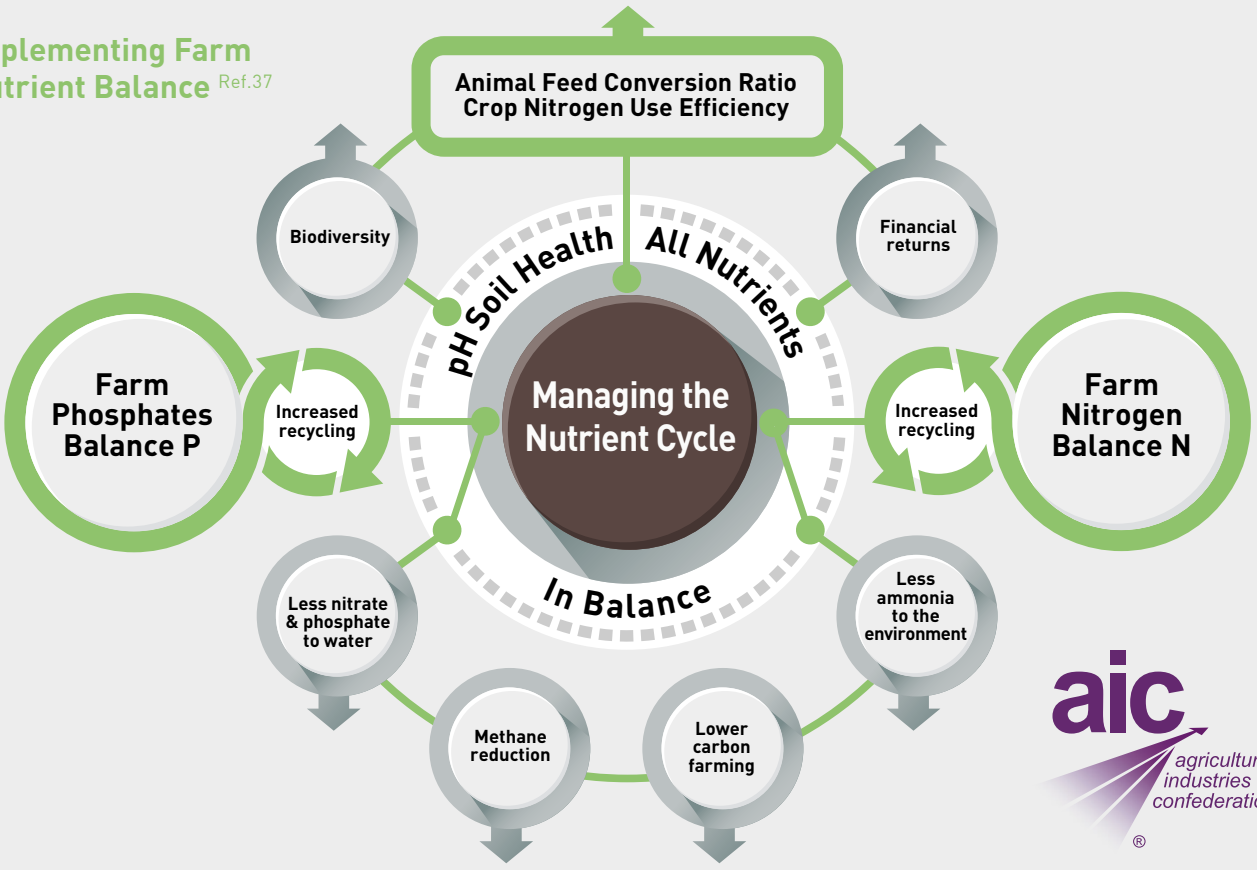
Natural Environment

This section looks at natural resources - the air, water, soil from which we produce feed, food, fuel and fibre, and through which we live and thrive. The scope of this chapter identifies the impact of these finite resources for Member businesses, what the current situation is, and actions that Member businesses should undertake.

	AIR	WATER	SOIL
Why does it matter	Despite significant improvement in recent decades, air quality continues to be the biggest environmental risk to human health and a source of harm to the natural environment, including impacting crop yields.	Only 1% of Earth's water is freshwater therefore it must be used wisely. Ref 52 Pollution, over-extraction, and climate change impact on clean water availability. Minimising diffuse and point sources of nitrogen loss are necessary to meet drinking water standards and reduce the need for and cost of water treatment. Water companies continually monitor for any occurrences of active ingredients from crop protection products at risk of affecting drinking water quality. Agriculture's direct water usage accounts for only 1% of water usage in England but its impact on local ecosystems and water availability should not be overlooked. Ref 53	Soil is a vital natural asset not only for food production but for supporting ecosystems in nutrient cycling, water flow regulation, habitat provision, filtering and buffering processes and physical stability. The degradation of soils impacts their ability to deliver these ecological benefits as well as impacting on agricultural productivity and practice. The erosion of soil is the main pathway for phosphorus into watercourses and carriage of any active ingredients from plant protection products.
Where are we now	The largest source of agricultural ammonia emissions is livestock, most notably from the storage, handling and spreading of livestock slurries and manures. The other dominant sources are the spreading of inorganic fertilisers, and from the spreading of anaerobic digestate which contributed 13% of total ammonia emissions in 2022 – mainly from nitrogen fertilisers containing urea. Ref 55 In 2022, Defra agreed to an industry-led consortium approach to reduce ammonia emissions from the application of fertilisers containing urea in England. This was based on widespread research that those fertilisers that are treated with inhibitors or coated are effective at cutting emissions by 70%. Ref 56 A BASIS hosted training course "Reducing Ammonia Emissions" - was developed by the AIC and NFU led consortium to give all farmers and advisers the knowledge and tools to reduce ammonia emissions across all farm types.	Regulations, incentives and advice apply throughout the UK. Since the late 1990's nitrogen and phosphate application rates have fallen. A comparison of soil nutrient balances (in kg per hectare) from the year 2000 to 2020 shows a 17% decrease for nitrogen and a 27% decrease for phosphate. Ref 54 FAR CPD Farm Nutrient Balance, is expected to add further to the improvement from the livestock sector, and will dovetail into planned FACTS CPD. Links between our advisers, their farmer clients and Catchment Sensitive Farming Officers have proven successful in reducing water pollution generally as well as in high-risk catchments.	The farm advisers of our Member businesses are becoming increasingly adept in providing agronomic advice linked directly to soil health and land capability. FACTS Qualified Advisers (FQAs) have invested in new CPD training on making better use of organic resources and from 2024 will revisit the value of soil management for optimal fertility. Defining what is a healthy soil and how to measure, evidence and demonstrate positive change is a challenge. In Northern Ireland the largest baseline soil sampling programme is being undertaken through the Soil Nutrient Health Scheme.
Destination	"Ours can become the first generation to leave the environment in a better state than we found it" (25 Year Environment Plan, Defra)		
	To reduce ammonia emissions by 8% compared to emissions in 2005 by 2020 and in each subsequent year up to and including 2029. Reduction in ammonia emissions by 16% by 2030 compared to emissions in 2005, of which 87% comes from agricultural sources. (Environmental Improvement Plan, Defra) Ref 27	Reduce nitrogen, phosphorus, and sediment pollution from agriculture into the water environment by at least 40% by 2038, compared to a 2018 baseline, with an interim target of 10% by 31 January 2028 and 15% in catchments containing protected sites in unfavourable condition (due to nutrient pollution) by 31 January 2028. (Environmental Improvement Plan, Defra) Ref 27	Bring at least 40% of England's agricultural soil into sustainable management by 2028 and increase this to 60% by 2030. (Environmental Improvement Plan, Defra) Ref 27

	AIR	WATER	SOIL
Overarching Drivers	Individual countries of the UK are developing their future agricultural and environmental policies. In all four countries the importance of soil health, clean air and water is apparent, with regulation, incentive and advice all focussing on improving the quality of these resources. The degree of focus however is country dependant.		
Policy Drivers	All four countries have strategies to address air quality in agriculture. Defra support for industry-led actions to reduce ammonia from fertiliser use. Defra's Clean Air Strategy proposes expanding existing environmental permitting conditions seen on pig and poultry farms to dairy and intensive beef farms. Defra are expected to consult on new rules in England to reduce ammonia emissions from the management of organic manures. Industrial Emissions Directive regulates limits on feed mill particulate emissions.	Government recognition for the role and value of professional farm advice. All the devolved nations have their own regulations aimed at reducing diffuse pollution from agriculture. The Water Framework Directive is implemented by all nations at catchment scale.	An increasing focus on soil health is reflected in all four UK nations. For example: In England SFI contributes to the commitments in Defra's Environmental Improvement Plan, those being: • **Establish a soil health indicator.** • **Publish a baseline map of soil health for England by 2028.** • **Support farmers and land managers to establish their own soil health baseline, so they can best manage the health of their soil.** • **Provide a methodology and tools to collect consistent information about the health of the soil under all land uses.**
Value Chain /Finance Drivers	Consumers and retailers are increasingly demanding products with lower environmental footprints. The value chain is responding through initiatives such as: - the WWF Basket with the aim to halve the environmental impact of UK baskets by 2030 through a range of outcomes and measures themed across seven areas. Seven major UK food retailers representing over 70% of the UK grocery market have committed to this which includes reporting against the measures on an annual basis. One of the outcomes is for 'at least 50% of fresh food from areas with sustainable water management'. Ref 30 - encouraging suppliers to adopt regenerative farming practices.		

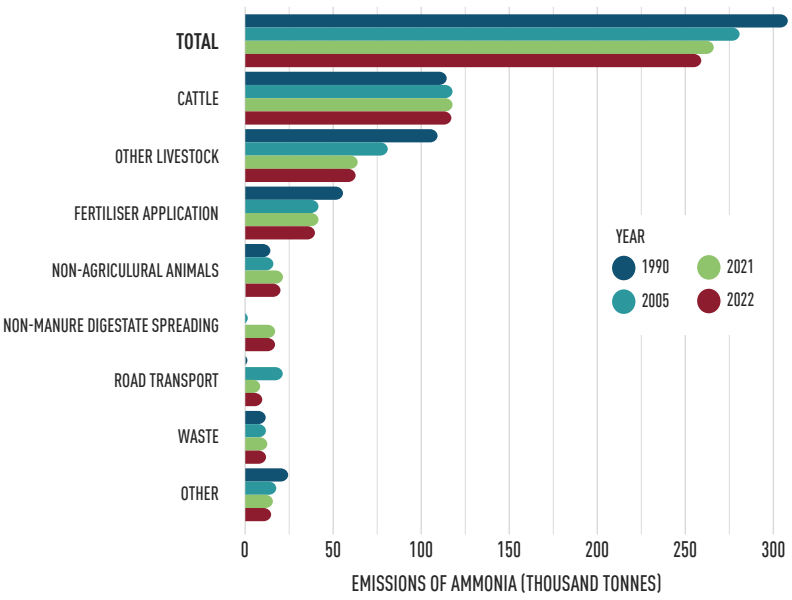
Implementing Farm Nutrient Balance Ref.37



* (NUE) ratio between amount of crop harvested and amount of N applied. * (FCR) ratio of animal feed input to meat/milk/eggs output. * (FNB) estimate of N and P in feeds, fertilisers, and any imported manures/organic materials minus N and P in harvested crops, liveweight and milk exported.

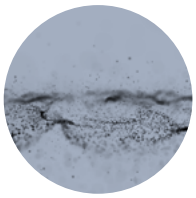
	AIR	WATER	SOIL
Action for Members	Provide annual data to Defra of all fertiliser sales, including details on treatments of products containing urea. Influence farmer compliance with ammonia mitigation to avoid legislative intervention. Integrate FAR and FACTS advice on farm to improve Farm Nutrient Balance. Invest in research to identify new technologies and practices to optimise nutrient use while minimising environmental impact.	Use Soil and Nutrient Management Plans proactively, ensuring crop nutrient requirements are met but not exceeded, and identifying and managing any risks to water and air from applied nutrients. Optimise feed conversion rates as part of the process of developing whole farm nutrient budgets. Encourage uptake of sustainable Integrated Pest Management practices (IPM). Continue to invest in trials and research to underpin BASIS, FACTS and FAR Qualified Advisers. Consider the added value of more joined up advice from across the full suite of professional registers.	Member businesses advising on farm need to continue to re-emphasise soil health and land capability in the agronomy and crop and livestock nutrition advice that they provide therefore improving and protecting soil health.
Challenge	Monitoring whether farmers comply with ammonia mitigation measures.	Defra have committed to reviewing farming regulations to make sure that they are effective in preventing water pollution. Improvements need to be seen with a combined incentive - regulation - advice approach.	The Office of Environmental Protection will hold Government to account in delivering the commitments it made under the Environmental Improvement Plan on soil health.
Enablers	AIC will establish and maintain robust data collection on fertiliser sales and efficacy of products inhibited/treated to furnish Defra with data on compliance with the inhibited urea measures. Defra will model the ammonia mitigation.	AIC will input into the proposed Defra review of water regulations impacting on agriculture. AIC will continue to ensure that FACTS and FAR qualified advisers are equipped with the latest knowledge and best practice to deliver changing policy themes by steering the direction of their annual CPD training.	AIC will input into future government initiatives and consultations on soil health.

UK annual emissions of ammonia by major emissions sources Ref. 54



Facts

AMMONIA EMISSIONS ARE THE PRIMARY AIR POLLUTANT OF CONCERN FROM AGRICULTURE - THE SECTOR BEING RESPONSIBLE FOR **87%** OF AMMONIA EMISSIONS IN THE UK. Ref 53



TRANSPORT ACCOUNTS FOR **14%** OF PM2.5S (FINE PARTICULATE MATTER LINKED TO HEART DISEASE, ASTHMA AND LOW BIRTH RATES) AND IS ALSO THE LARGEST EMITTING SECTOR OF GREENHOUSE GASES, PRODUCING 26% OF THE UK'S TOTAL EMISSIONS.

TRANSPORT ACCOUNTS FOR **32%** OF THE UK'S NOx EMISSIONS. Ref 57

Integrated Pest Management (IPM)

Context

Integrated Pest Management is an effective and environmentally sensitive approach to pest management that relies on a combination of common-sense practices. It is a sustainable approach to food production that manages pests using a combination of biological, cultural, physical and chemical tools in a way that minimises economic, health and environmental risks. [Ref 57]

Why does it matter

The effects of plant protection product use on biodiversity and the environment are incredibly difficult to measure accurately because many factors such as the weather, habitat availability and wider human activity all have significant impacts that vary from year to year.

However, there is a consensus that insect populations are on the decline and that measures need to be taken in all areas, urban and rural, to halt this. Agriculture is responding to this by minimising the use of pesticides through the adoption of an IPM approach.

Influences

The strategy of the UK Government to mitigate the adverse effects of pesticides is outlined in the National Action Plan for Sustainable Pesticide Use (NAP). The first NAP was published in 2013 and was expected to be reviewed every five years.

The overarching objective of the NAP is to minimise the risks and impacts associated with pesticides on human health and the environment, all the while ensuring effective management of pests and pesticide resistance – key principles of an IPM approach.

In response to the biodiversity targets outlined in the Environment Act 2021 and the development of new agri-environment schemes, since 2023 Defra have provided financial incentives to farmers in England through the Sustainable Farming Incentive to support greater uptake of IPM on-farm and reduce reliance on plant protection products.

Where are we now

Agronomist recommendations and subsequent adoption of IPM practices, along with improved formulations and application practices have reduced the amount of crop protection products used on farm. Treated areas of arable crops in the UK (number of hectares multiplied by number of applications) having remained relatively stable since 2008 and the total amount of pesticide applied (kg/ha) show an overall decline. [Ref 72]

The Voluntary Initiative continues to provide effective support to advisers and their farmer clients in improving water quality through IPM as well as in minimising the impact of plant protection products through enhanced stewardship.

Under the Sustainable Farming Incentive in England farmers can receive payments for IPM planning in conjunction with the use of a BASIS Qualified Adviser. Farmers can also receive payments for establishing flower-rich grass margins, blocks and strips that will provide a habitat for natural crop pest predators; sowing a trap crop to attract crop pests away from the main arable crop; and adopting a range of precision farming actions, such as robotic weeding.

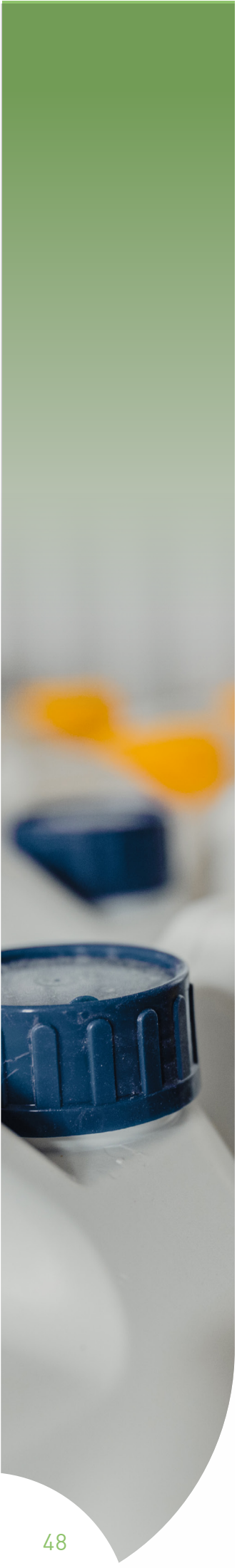
IPM is also set to play a central part in the agri-environment schemes that will be implemented in the devolved nations – Scotland and Northern Ireland advocating the completion of integrated pest management plans - whilst in Wales the proposed Sustainable Farming Scheme detailed that farmers will be supported through Farming Connect to collect, record and report data on plant protection product use and to also complete an IPM assessment.

An IPM approach can also include growing crops that are more resistant to pests through ensuring they are as healthy and robust as possible – seed treatments offer a more targeted means of protection against pest and disease, using less active ingredient than field scale crop applications, or by introducing resistant genes to crop varieties through precision breeding.

Challenge

The updated NAP will be a framework document under which UK legislation, voluntary measures and best practice will be used to achieve the plan's objectives. The government is six years overdue in publishing its revised NAP and whilst IPM will undoubtedly have a significant role to play, the sector needs certainty around how it can continue to protect human health and the environment whilst sustaining food production in the UK.

SCAN THE QR CODE
TO DOWNLOAD OUR IPM GUIDES



REPURPOSING AND RECYCLING
IMPROVING THE CIRCULARITY OF PACKAGING

AIMS

- Increase recycled content of packaging.
- Use materials that are easily recycled.
- Reduce the volume of packaging.

Influencers

- 25 Year Environmental Plan to minimise environmental impact through:
- The Resources and Waste Strategy to eliminate all avoidable waste by 2050 with recycling targets for individual materials – e.g. plastics by 2042.
- The Extended Producer Responsibility (EPR) for Packaging system which will make packaging producers responsible for 100% of the waste management cost of dealing with the packaging waste they've produced.
- The Plastics Tax to encourage the use of recycled plastics within plastic packaging.
- The WRAP UK plastics Pact and the WWF Basket Metrics are aimed at reducing plastic use for consumers and apply across the value chain.

Where is the Agricultural Input Supply industry now

- Since 1990 packaging has reduced by circa 70% with a connected 90% reduction in energy as bag capacity has increased from 50kg to 1,000 kg. Ref 59
- Members of the Fertiliser sector meet the Plastic Tax criteria.
- A number of businesses are members of Green Tractor Scheme and/or Agriculture, Plastics and Environment (APE).
- Members are producing 100% recyclable seed bags.
- Members are increasingly operating a deposit return schemes for containers.

FACTS

DESTINATION

- **To meet the target of eliminating avoidable waste (with zero waste to landfill) by 2050.**

Enablers

- The Plastics Tax should be ring-fenced to boost UK recycling capacity.
- EPR proceeds should be ring-fenced to stimulate increased plastic recycling infrastructure, as demand currently outstrips supply.
- Research is needed in the animal feed sector to address the challenge of increasing recycled content/recycling whilst meeting food and feed safety standards.

- Waste emissions account for 25mt CO_2 equivalent – 6% of UK emissions. Ref 60
- The World produces 141mt of plastic packaging/year. One third of this is lost from collecting systems. Ref 61
- Plastics contribute 1.8bn tonnes of carbon emissions/year. Ref 73

Action for Members

- Implement the waste hierarchy to minimise the use of packaging.
- Engage with packaging suppliers/manufacturers to find solutions – minimise waste, increase recycled content, improve recyclability.
- Integrate data collection and monitoring processes into the business to enable progress towards the target of eliminating all avoidable waste by 2050.
- Join existing initiatives such as Green Tractor Scheme and/or Agriculture, Plastics and Environment (APE).

Sustainable Communities

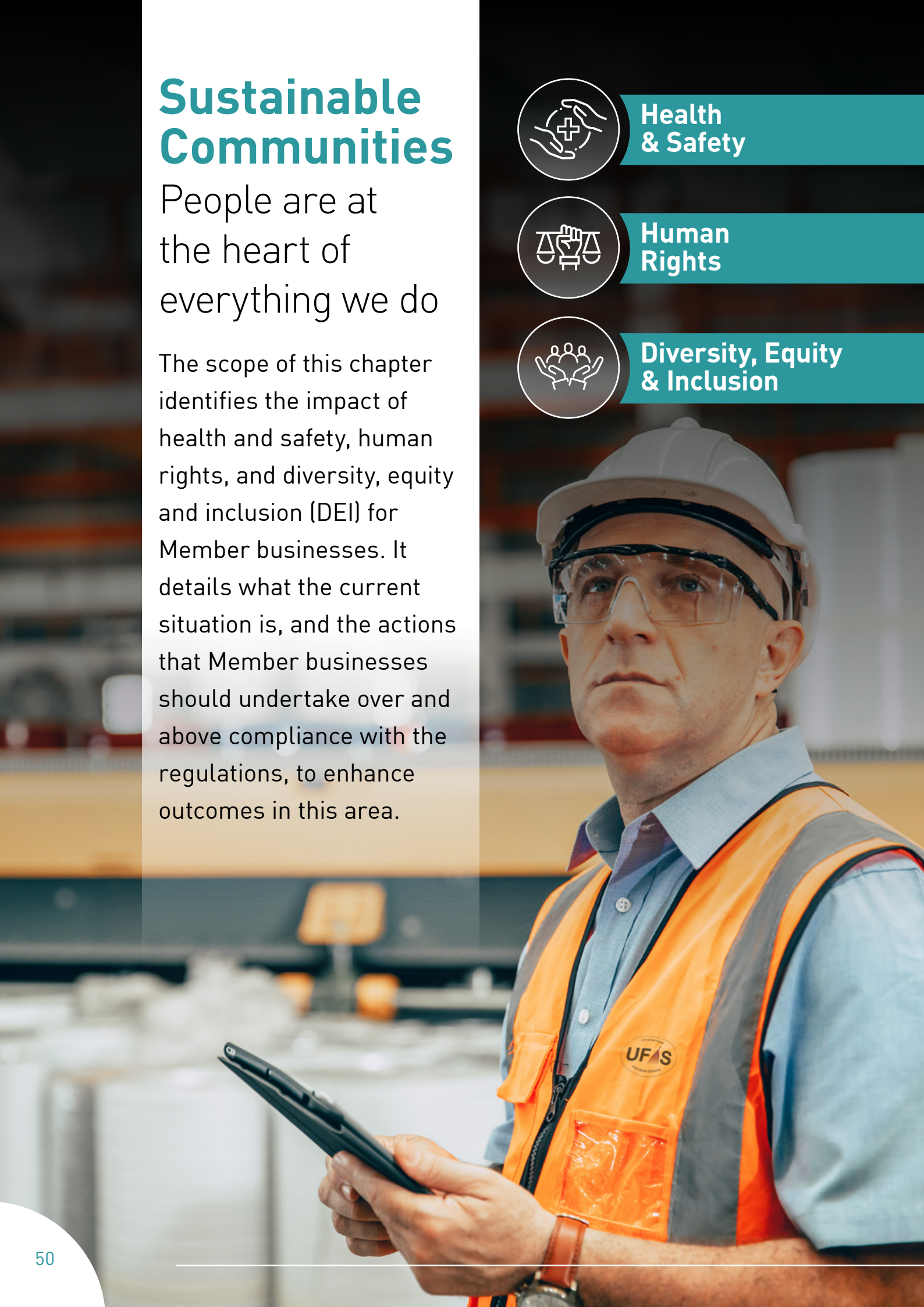
People are at the heart of everything we do

The scope of this chapter identifies the impact of health and safety, human rights, and diversity, equity and inclusion (DEI) for Member businesses. It details what the current situation is, and the actions that Member businesses should undertake over and above compliance with the regulations, to enhance outcomes in this area.

Health & Safety

Human Rights

Diversity, Equity & Inclusion



What does it mean

The Health and Safety at Work Act 1974 is the enabling legislation covering health and safety for businesses in the UK. This is supplemented by various additional regulations and approved codes of practice covering the full range of activities in the workplace.

The Human Rights Act 1998 encompasses fairness, respect, equality, and dignity. This is complemented by the Modern Slavery Act 2015 which lays out in law the right to justice, dignity, and respect for all individuals.

Within a business, Diversity, Equity, and Inclusion (DEI) represents a set of interconnected values which encompass the fair treatment of all people while taking into consideration an individual's unique circumstances.

Benefits to Business

A strong health and safety focus brings several benefits to business:

- **Improving productivity (London School of Economics).** [Ref 62]
- **Increasing attractiveness to investors, shareholders, and customers.**
- **Being employers of choice. Research by the organisation 'Workplace' shows that 71% of professionals would consider a pay cut to work in a business that shares their values.** [Ref 63]
- **Building trust through positive reputational and brand benefits.**

The Modern Slavery Act 2015 applies globally to eligible UK businesses and their supply chains. As well as publishing an annual action statement, businesses can demonstrate their values and enhance their reputation through maintaining security of supply and caring about the wellbeing of workers throughout the supply chain.

Evidence shows that organisations that embrace DEI are better equipped to respond to challenges, and can deliver significant business advantages: [Ref 64]

- **Access a wider talent pool bringing fresh perspectives, skills, and experiences.**
- **Deliver better financial performance as inclusive environments foster collaboration, leading to innovation and better decision-making.**
- **Employees are more engaged and productive by feeling valued, supported, and respected.**
- **Higher employee retention as employees who feel included are less likely to leave the business.**

Where are we now

Current figures show that in the UK, the agricultural sector remains one of the deadliest. Although the sector accounts for just 1 in 100 workers, it unfortunately accounts for one in five fatal injuries to workers. [Ref 64]

The wider farming industry is gathering evidence on mental health, with the Royal Agricultural Benevolent Institute's Big Farming Survey stating that more than a third of people in farming could be suffering from depression. [Ref 66]

Whilst AIC Member businesses are not directly farming, they are involved with farmers as their customers, delivering to and advising on farm and are therefore impacted by the sectors health and safety performance and have a role in enhancing it.

According to the Business and Human Rights Resource Centre, only three in five businesses are reporting their Modern Slavery Statements. [Ref 67] There are no sector specific figures to identify performance across different industries or reporting of activities being undertaken by businesses over and above the regulatory baseline.

When it comes to DEI, a Nuffield Farming Scholarship [Ref 67] report found that the UK agricultural profession remains one of the least diverse in terms of ethnicity, however, the number of females in agriculture has increased 10% in eleven years. [Ref 68]

Facts

IN 2022/23

27 people

WERE KILLED AS A RESULT OF FARMING AND OTHER AGRICULTURE-RELATED ACTIVITIES. Ref 64

NUMBERS OF BLACK AND PEOPLE OF COLOUR (BPOC) WORKING IN UK AGRICULTURE VARY BETWEEN

0.8 – 1.2%

VERSUS 17% OF THE GENERAL POPULATION AND 33% OF CHILDREN. Ref 68

STATISTICS SHOW THAT

17%

OF FARMERS WERE FEMALE IN 2019 COMPARED TO 7% IN 2007 – 2008. Ref 69

2,000

BUSINESSES ARE NOW CERTIFIED B-CORPS IN THE UK THEREBY DEMONSTRATING A HIGH STANDARD OF SOCIAL AND ENVIRONMENTAL PERFORMANCE, ACCOUNTABILITY, AND TRANSPARENCY. Ref 14

Destination

- **Behaviour change will ultimately drive continuous improvement in health and safety across the industry.**
- **Supply chain transparency statements reflect actions that can be evidenced to show that the rights of individuals and communities are considered in all decision making.**
- **Implementation of DEI policy to create a working environment in which all individuals feel valued, respected, and empowered, demonstrating the agriculture industries as an attractive and viable career path for people of all backgrounds and ethnicities.**

Drivers

Regulation

The Health and Safety at Work Act 1974 and the regulations made under it are the main policy drivers in the UK and the Corporate Sustainability Reporting Directive (CSRD) will impact businesses operating in the EU.

In April 2024 over 150 businesses and investors called on UK Government to create a Business Human Rights & Environment Act (BHREA) Ref 70 which would mandate businesses and the public sector to prevent human rights and environmental harm in their own operations and value chain.

The EUs Deforestation Regulation incorporates social requirements, and the Directive on Corporate Sustainability Due Diligence is likely to come into force across the EU in 2026.

The Equality Act 2010 protects against discrimination through its nine protected characteristics.

Finance

The International Financial Reporting Standards (IFRS) are being considered for endorsement by the UK Government and include social resources.

Voluntary

B-Corps certified businesses are required to demonstrate their commitment to DEI by creating safe and equitable workplaces.

Sedex Members Ethical Trade Audit (SMETA) - covers labour standards, health and safety, business ethics, and the environment, helping businesses understand and improve their ethical, social, and environmental performance.

Actions for Members

Health & Safety

- **Regular review, update and sharing of risk assessments.**
- **Report at Board level against health and safety KPIs.**
- **Develop training protocols and procedures.**
- **Offer mental health support and training.**
- **Explore innovative safety technologies – wearables, real-time and predictive analytics.**

Human Rights

- **Develop and publish a Modern Slavery Statement if not already a regulatory requirement.**
- **Conduct risk assessments and report at Board level.**
- **Consider adopting voluntary standards such as B-Corp or SMETA.**

Diversity, Equity and Inclusion

- **Link DEI with the values of the business and engage employees.**
- **Provide training and opportunities for feedback.**
- **Adopt the National Equality Standards and consider B-Corp.**

Enablers

- Complete and implement learnings from AIC's Agri-Supply Health & Safety Module once published.
- Share incidents and near misses with AIC for industry learning through our Business Insight E-Newsletter.
- Create products to support Member businesses in demonstrating due diligence in their supply chain.
- Promote agriculture and the agri-supply industry as a viable and interesting career for all.
- Broaden the Future Feed Forum project to include all AIC sectors.
- Provide case studies on the breadth of careers available in the industry.

Collated Member actions from the report

Member Actions

Economic Resilience

Agility and adaptability will secure resilience

WHERE TO START	NEXT STEP	FURTHER STEPS
Data, Technology and Systems		
Consider AIC's Sustainability Training for Board and Senior Managers delivered by SLR Consulting to identify sustainability priorities and KPIs for the business, what data will be required to report against them, and the systems that need to be in place.	Implement a sustainability management system which can be used to design, implement, and improve sustainability practices.	Explore the potential for automation of data gathering using market produced platforms/tools.
Complete AICs Sustainability Self-Assessment Framework to inform areas of strength and areas that need action.		
Map reporting requirements, which legislation or standard they relate to, who manages them, the data required, and when this is required.	Consider what systems are required to gather the data to meet the reporting requirements.	
Corporate Knowledge		
Publishing company values and providing case studies on how they are demonstrated.		
Developing annual Personal Development Plans with individuals. Providing support and time for them to be completed, and supporting staff to be a member of, and remain on, professional registers.	Considering a range of options for personal development including job shadowing and mentoring, covering both soft and technical skills.	Developing internal shared systems to capture knowledge to support succession planning and staff turnover.
Communicate openly with customers on sustainability commitments.		
Access to Finance		
Horizon scan for upcoming regulatory requirements.	Increase awareness and understanding of the various voluntary standards for disclosure currently being implemented.	Consider how to incorporate potential requests for information required by the disclosures into reporting processes.

Member Actions

Natural Environment

We should be a restorative industry

WHERE TO START	NEXT STEP	FURTHER STEPS
Climate Impact		
Business and social		
Plan to continually improve Scope 1 and 2 carbon emissions and communicate Scope 3 emissions and reductions.	Report carbon emissions in accordance with any regulatory reporting requirements as well as progress made against any voluntary targets and commitments.	Use recognised sector approaches to claim improvements in carbon footprinting of products.
Develop and implement a carbon emissions management plan.	Assess what climate change adaptations your business will require in the future and develop a plan that will deliver these.	
Processing and Production		
Continue to work to decarbonise business operations, replacing plant with low carbon energy sources or energy efficient options when they come to the end of their life.	Developing internal shared systems to capture knowledge to support succession planning and staff turnover.	
Continue to engage with AIC to provide insight on the impacts EU and UK Carbon Border Adjustment Mechanisms (CBAM) on Fertiliser sector Member businesses.		
Develop and offer seed varieties that are more resistant to extreme and variable growing conditions.		
Logistics and Storage		
To continue the emission reduction trajectory through the adoption of new technology as it comes to market e.g. renewable energy heating, lighting and refrigeration across all premises.	Take advantage of feasibility pilots and associated funding as they become available as part of the Government's low carbon transport strategy to move to low carbon solutions for HGVs.	
Circular Economy		
Look for opportunities to utilise recovered/ recycled materials within products to reduce energy demands/use from primary production processes.		Provide evidence to demonstrate reductions in carbon emissions in the manufacturing processes at a product level through the utilisation of circular economy processes.
Adviser and Farmer Relationships		
Maximising the greenhouse gas emission performance of farm inputs to support farmer clients to lower the carbon footprint of their products and for Members themselves to lower their Scope 3 emissions.	Set on farm targets for activity change with clients, combining the product offering with advice on efficient use to achieve an improved 'Product' plus 'Use' footprint.	

Member Actions

Natural Environment

We should be a restorative industry

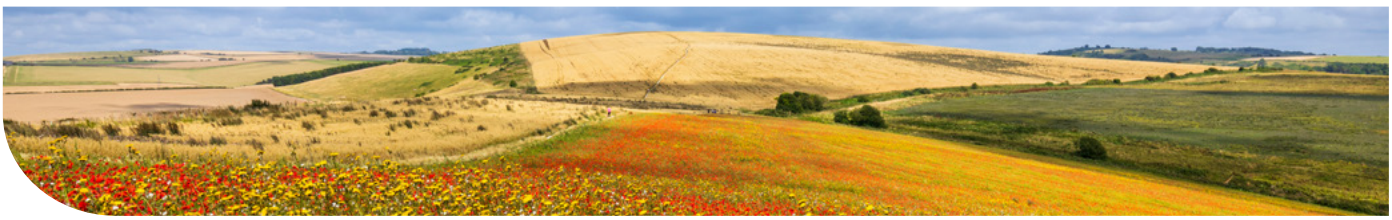
WHERE TO START	NEXT STEP	FURTHER STEPS
Biodiversity and Ecosystems		
Continue to proactively engage, support and promote the Voluntary Initiative and its achievements.	→	Continue to explore research and development opportunities for seed treatments as well as precision breeding to broaden the scope of crop varieties and accelerate the delivery of special traits to market.
→	Work towards the Soya Manifesto commitment of delivering 100% vDCFsoya by the end of 2025.	Support the development and implementation of innovations into sustainable technologies.
Roll out the latest FACTS knowledge to deliver improved Nitrogen Use Efficiency, reduce ammonia and nitrous oxide emissions to air and nitrate leaching to water.	→	
Ensure that there is sufficient seed in the country for farmers to be able to deliver the actions under SFI and provide early warning to AIC on any seed shortages to enable communication with government.	Continually develop training and advice offers for agri-environment schemes.	→
Sustainable Raw Materials		
Apply food and drink material hierarchy when considering use of 'waste' products.	→	Supporting development and implementation of sustainable innovations.
Aim to maximise recovery and efficiency of raw materials and products.	The Fertiliser sector to actively work with those developing methods to enable more efficient recycling and reuse of nutrients.	→
→	Explore options for lowering overall emissions reduction and environmental impact from production through to product offer and services.	Assess the environmental impact of all products, for example through the calculation of product environmental footprints.
Consider the added value of more joined up advice from across the full suite of professional registers.	Support UK agriculture, as appropriate to individual Member business priorities, to produce sustainable agricultural raw materials.	→

Member Actions

Natural Environment

We should be a restorative industry

WHERE TO START	NEXT STEP	FURTHER STEPS
Natural Resources		
Provide annual data to Defra of all fertiliser sales, including details on treatments of products containing urea.	Influence farmer compliance with ammonia mitigation to avoid legislative intervention.	Invest in research to identify new technologies and practices to optimise nutrient use while minimising environmental impact.
Member businesses advising on farm need to continue to re-emphasise soil health and land capability in the agronomy and crop and livestock nutrition advice that they provide, therefore improving and protecting soil health.	Optimise feed conversion rates as part of the process of developing whole farm nutrient budgets.	
Use soil and Nutrient Management Plans proactively, ensuring crop nutrient requirements are met but not exceeded, and identifying and managing any risks to water and air from applied nutrients.	Integrate FAR and FACTS advice on farm to improve Farm Nutrient Balance (FNB). Members driving FNB campaign (across all sectors).	Continue to invest in trials and research to underpin BASIS, FACTS and FAR Qualified Advisers.
Encourage uptake of sustainable Integrated Pest Management practices (IPM).		
Repurposing and Recycling		
Implement the waste hierarchy to minimise the use of packaging.	Engage with packaging suppliers/ manufacturers to find solutions – minimise waste, increase recycled content, improve recyclability.	Integrate data collection and monitoring processes into the business to enable progress towards the target of eliminating avoidable waste by 2050.
Join existing initiatives such as Green Tractor Scheme and/or Agriculture, Plastics and Environment (APE).		



Member Actions

Sustainable Communities

People are at the heart of everything we do

WHERE TO START	NEXT STEP	FURTHER STEPS
Health & Safety		
Regular review, update and sharing of risk assessments.	Offer mental health support and training.	Explore innovative safety technologies – wearables, real-time and predictive analytics.
Report at Board level against health and safety KPIs.		
Develop training protocols and procedures.		
Human Rights		
Conduct risk assessment and report at Board level.	Develop and publish an annual Modern Slavery Statement if not already a regulatory requirement.	Consider adopting voluntary standards such as B-Corp or SMETA.
Diversity, Equity and Inclusion		
Link DEI with the values of the business and engage employees.		Adopt the National Equality Standards and consider B-Corp.
Provide training and opportunities for feedback.		

Collated AIC enablers from the report

AIC Enablers

Economic Resilience

Agility and adaptability will secure resilience

LEADERSHIP	COLLABORATION	ADVOCACY
Data, Technology and Systems		
Consider the development of a database for regulatory and voluntary standards relevant to sustainability for UK agriculture.	Encourage cross-industry collaboration on how data could be communicated in the supply chains.	
Use aggregated data from AICs Self-Assessment Framework for benchmarking and to identify areas where further support is needed.		
Corporate Knowledge		
Broaden the Future Feed Forum project to include all AIC Sectors.	Continue to work with and across the professional registers to ensure that CPD is relevant, joined up, and complementary to equip employees with the skills and knowledge required by the industry.	Contribute to industry-wide initiatives that project agriculture as a viable and interesting career.
Develop a sustainability module in farm trader and merchant training.		
Access to Finance		
Signpost or provide information on future regulations and their impacts.		Advocate to Government the need for a consistent approach to sustainability reporting.

AIC Enablers

Natural Environment

We should be a restorative industry

LEADERSHIP	COLLABORATION	ADVOCACY
Climate Impact		
Update Members on policy developments and resources in relation to Scope 1 and 2 emissions and carbon reporting.	Work with allied bodies to widen the scope for financial support to all systems which can verify carbon emissions reduction.	To lobby to have power generated from onsite renewables or green energy to be recognised in future Climate Change Agreements (CCAs) and for targets to be based on carbon savings not simply on energy efficiency.
Influence Food Data Transparency Partnership (FDTP) and Scope 3 Food and Drink sector emissions (i.e. farming emissions) to ensure approaches accurately reflect AIC Members' actions.	Identify and signpost to alternative funding opportunities to drive forward research for climate resistant crop varieties.	Continue to advocate for the use of co-products that achieve reductions in greenhouse gases rather than them being used to generate energy through anaerobic digestion.
Lobby for Member activities upstream of the farm gate to be included within WRAP's revised Scope 3 protocols guidance so that carbon reporting in the food supply chain is comprehensive and consistent.	Signpost to technological developments and opportunities to participate in pilot studies and access available funding as national policy and infrastructure in this area develops.	Advocate for the expansion of NUTS2 to cover a wider range of UK crops.
Continue to work with Members to influence the future direction of CBAM, Energy Trading Scheme (ETS) and Climate Change Agreements (CCAs) so that there is a safe and stable transition to decarbonisation.	Work with providers of carbon calculator tools to ensure that UK activity data and data for farm inputs is as representative of the agri-supply industry as possible.	
Help Trade Assurance Scheme for Combinable Crops Participants in a pre-competitive way to decarbonise fleets and logistics operations – rural proofing their businesses whilst wider infrastructure projects are rolled-out.		
Ensure that Members are aware of work that results in the update and alignment of key carbon calculators to new science and guidance.		
Biodiversity and Ecosystems		
Ensuring advice is integral to delivering policy outcomes and is formally recognised and incentivised.	Encourage plant protection product registrations, including those used as seed treatments through the streamlining of GB's plant protection product regulatory regime.	Use AIC Integrated Pest Management infographics to help communications with farmers and stakeholders.
Ensure that both FACTS and FAR advisers are recognised by policy makers and farmers for their proactive effort to encourage farmers to set targets for Nitrogen Use Efficiencies and reduce ammonia losses.	Ensure market access for precision bred commodities.	Continue to engage with Defra on the development and operation of the SFI scheme, including continuing to highlight where import trade is affected.

LEADERSHIP	COLLABORATION	ADVOCACY
Ensure that there is sufficient seed in the country for farmers to be able to deliver the actions under SFI and provide early warning to AIC on any seed shortages to enable communication with government.	AIC continues to support discussion with UK authorities to bring forward legislation that will expand compliant feed sources.	
AIC's development of a voluntary Sustainable Commodities Scheme which will help businesses demonstrate compliance with UK FRC regulation.	Work collaboratively to ensure that there is a common understanding of Nitrogen Use Efficiency across the industry.	
AIC's continued engagement with the supply chain to ensure that commitments by retailers and processors work for our Members.		

Sustainable Raw Materials

Facilitate a discussion on how to address any evidence gaps on the impact of changing practices.	Work with the feed sector to incorporate home-grown branded feed and UK activity data into GFLI and farm carbon footprinting tools to ensure the tools reflect UK production methods and products used by UK farmers.	Continue to advocate for former foodstuffs to be exempted from any future UK Forest Risk Commodity legislation.
Keep Members up to date with the latest drivers and commitments of value chain actors.	Continue to work on an enabling regulatory environment to facilitate the safe introduction of novel proteins into the agri-supply sector.	
	Continue to work with the water industry and our fertiliser Members on the feasibility of incorporating recovered nutrients into fertiliser products in the UK.	
	Collaborative working with industry stakeholders to ensure that Nutrient Management Guide (RB209) and Scotland's equivalent remains a relevant and comprehensive guide for crop nutrition.	
	Consider how CPD can be complementary between BASIS, FACTS and FAR in recognition of the dependencies and synergies between the technical areas they cover and the need for a whole farm/system approach to management and actions.	
	To work with stakeholders e.g. AHDB to consider how data on Nitrogen Use Efficiency could be gathered and shared to provide evidence on optimal nutrient use on farm, demonstrate and share best practice.	
	Work with others in the industry to analyse data on uptake of farm support policies to identify where there may be adverse impacts on productivity.	

AIC Enablers

Natural Environment

We should be a restorative industry

LEADERSHIP	COLLABORATION	ADVOCACY
Natural Resources		
AIC will establish and maintain robust data collection on fertiliser sales and efficacy of products inhibited/treated to furnish Defra with data on compliance with the inhibited urea measures. Defra will model the ammonia mitigation.	AIC will continue to ensure that FACTS and FAR qualified advisers are equipped with the latest knowledge and best practice to deliver changing policy themes by contributing to the direction of their annual CPD training.	AIC will input into the proposed Defra review of water regulations impacting on agriculture.
		AIC will input into future government initiatives and consultations on soil health.
Repurposing and Recycling		
	Working with the supply chain to promote that Plastic Tax should be ring-fenced to boost UK recycling capacity.	
	Working with the supply chain to promote that EPR proceeds should be ring-fenced to stimulate increased plastic recycling infrastructure, as demand currently outstrips supply.	
	Research is needed in the animal feed sector to address the challenge of increasing recycled content/recycling in packaging.	

AIC Enablers

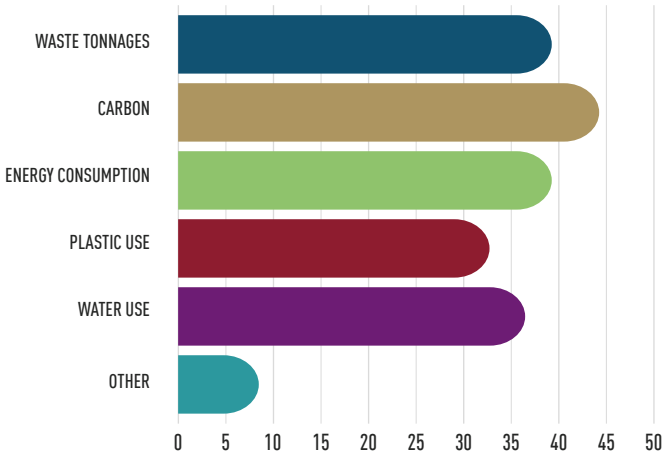
Sustainable Communities

People are at the heart of everything we do

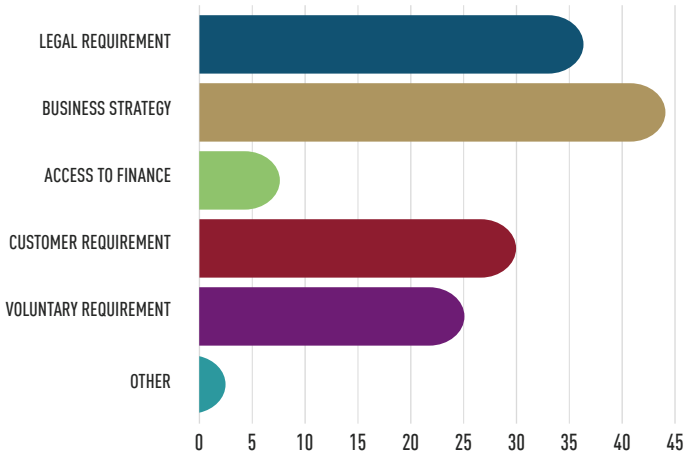
LEADERSHIP	COLLABORATION	ADVOCACY
Health and Safety		
Complete and implement learnings from AIC's Agri-Supply Health & Safety Module when published.		Share incidents and near misses with AIC for industry learning through AIC's Business Insight E-Newsletter.
Human Rights		
Create products to support Members in demonstrating due diligence in their supply chain.		
Diversity, Equity and Inclusion		
Broaden AIC's Future Feed Forum project to include all AIC sectors.		Promote agriculture and the agri-supply industry as a viable and interesting career for all.
		Provide case studies on the breadth of careers available in the industry.

AIC Member Sustainability Survey

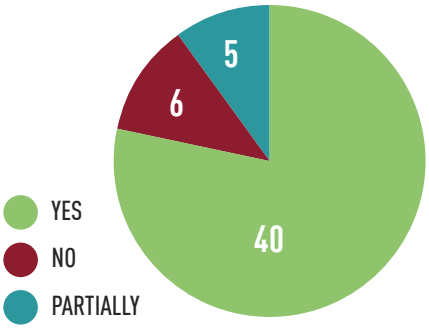
WHAT SUSTAINABILITY DATA ARE YOU GATHERING?



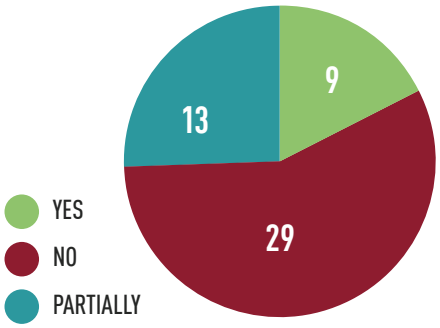
WHY ARE YOU GATHERING SUSTAINABILITY DATA?



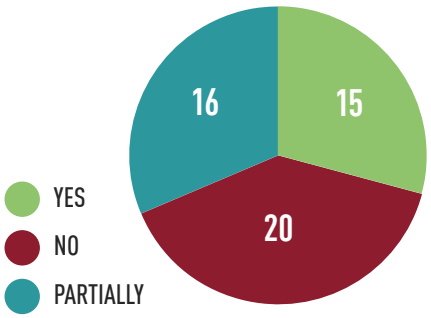
ARE YOU CALCULATING YOUR SCOPE 1 AND SCOPE 2 EMISSIONS AT A BUSINESS LEVEL?



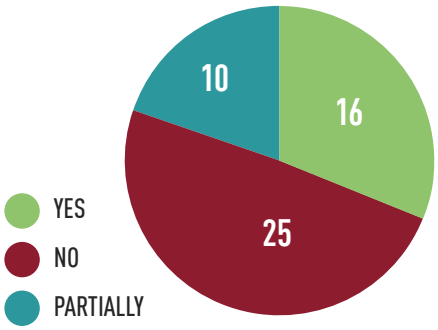
ARE YOU CALCULATING YOUR SCOPE 1 AND SCOPE 2 EMISSIONS AT AN INDIVIDUAL PRODUCT LEVEL?



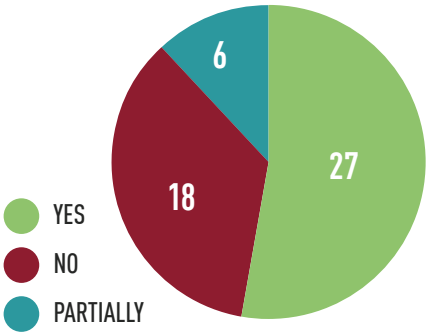
HAVE YOU SOUGHT SCOPE 3 EMISSION DATA FROM YOUR SUPPLIERS AT A PRODUCT LEVEL?



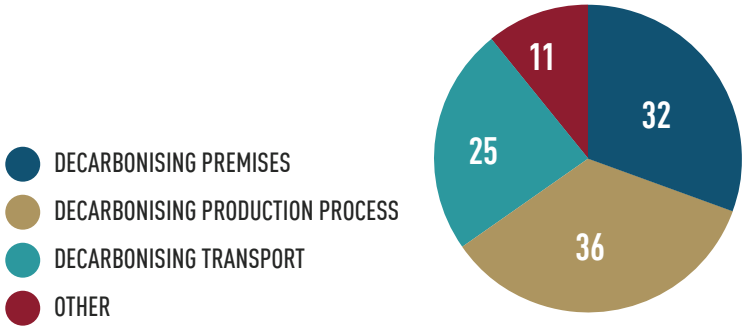
HAVE YOU PROVIDED SCOPE 3 EMISSION DATA TO YOUR CUSTOMERS?



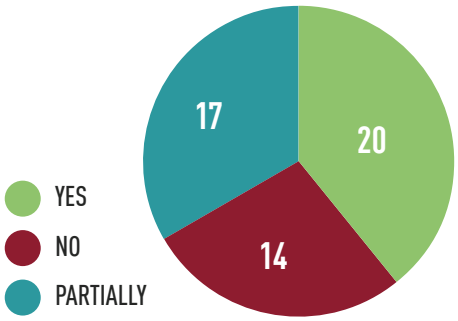
IF YOU ARE CALCULATING SCOPE 1-3 DATA, HAS ANY OF IT BEEN VALIDATED WITH A THIRD PARTY?



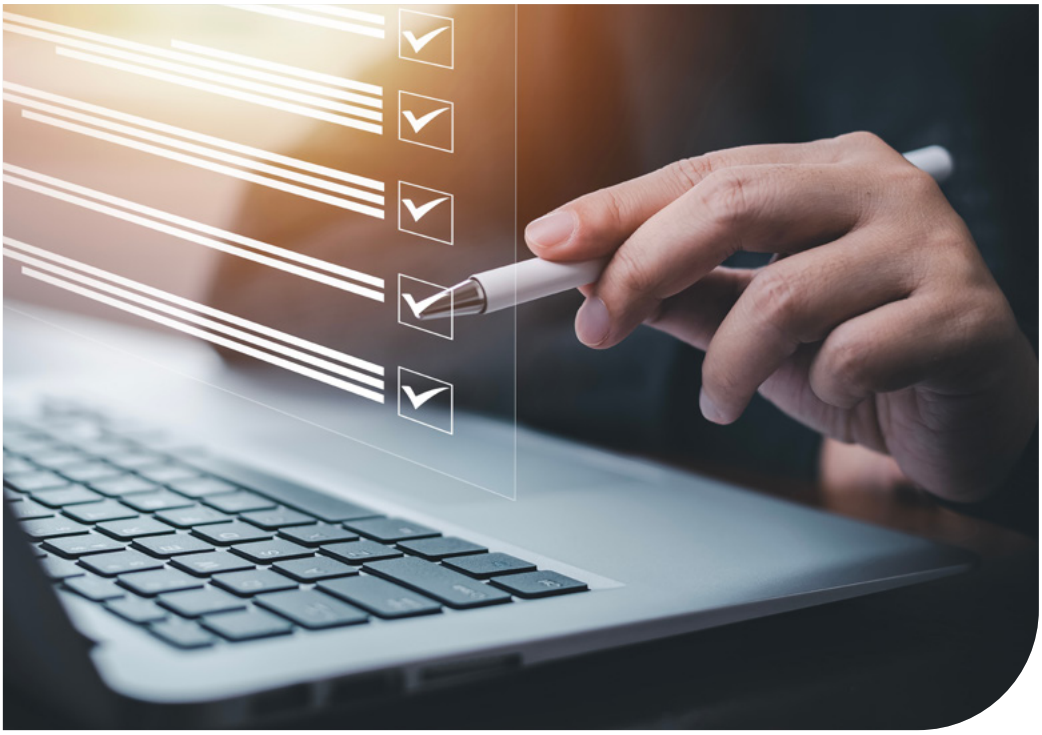
WHAT CHANGES ARE YOU MAKING TO YOUR BUSINESS BECAUSE OF THE CARBON DATA YOU ARE RECORDING?



ARE YOU ENCOURAGING REGENERATIVE AGRICULTURE IN YOUR SUPPLY CHAIN, SUCH AS THROUGH ADVICE PROVISION OR INCENTIVES/PREMIUMS?



Source: AIC survey 2024, 51 respondents.



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Ref 8 They cover 77 industries, ensuring that the most relevant sustainability issues for each industry are addressed

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Ref 10 With more than 14,000 GRI reporters in over 100 countries, the GRI is a global leader in sustainability reporting

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We welcome all interested parties to come together and work with us to deliver a sustainable UK food system.

SCAN ME

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