



LINKING ENVIRONMENT AND FARMING



DELIVERING MORE SUSTAINABLE FOOD AND FARMING

LEAF's Global Impacts Report 2020

LEAF (Linking Environment And Farming)

the go-to organisation for the delivery of
more sustainable farming

Who We Are

LEAF (Linking Environment And Farming) – a leading organisation delivering more sustainable food and farming. We work with farmers, the food industry, scientists and consumers, to inspire and enable sustainable farming that is prosperous, enriches the environment and engages local communities



Our Vision

A world that is farming, eating and living sustainably



Our Work

We work to develop and promote Integrated Farm Management (IFM) in three core pillars:

- Facilitating knowledge generation and exchange
- Developing market opportunities through LEAF Marque
- Educating and engaging the public in sustainable food and farming



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Disclaimer statement: The monitoring data in this report is based on data collected by LEAF and reported by LEAF members through LEAF Membership data, the LEAF Annual Survey, LEAF Sustainable Farming Review self-assessment process and Independent Evaluations as well as from LEAF Open Farm Sunday and LEAF Education. LEAF is not responsible for the accuracy of the data. The report has been compiled to the best of our knowledge and is provided for information purposes only. LEAF reserves the right to update the monitoring data as new information becomes available. The data is provided "as is" and no warranty of any kind is given for the accuracy and reliability of the data. LEAF will not be liable for any claims or damages related to the quality and completeness of the data, as far as it is permitted under English law.

Industry support



Leah Mathias-Collins, Environment Manager, Vitacress

"Vitacress make decisions for sustainable growth and are determined to leave things better than we found them. Our work with LEAF ensures that we are ready for the upcoming agricultural and environmental legislative changes and the next level in sustainable farming."



Clare Blackledge, Programme Manager Market-led Approaches, Environment Agency

"We continue to value our long-standing relationship with LEAF. Being able to reward the environmental performance of LEAF Marque certified farms through formal earned recognition allows us to target our resources away from these lower risk farms."



Ian Finlayson, Chairman, LEAF Marque Technical Advisory Committee

"LEAF Marque provides an excellent route towards meeting the objectives of the 25 year Environment Strategy and in the light of post-Brexit negotiations, LEAF Marque clearly demonstrates the 'public good' provided by farmers and growers."



Rebecca Hesketh, Partner & Agriculture Manager, Fresh Produce, Waitrose & Partners

"LEAF has been one of our key partners for many years. They help our farmers to farm in a considered way - supporting them in the protection and enhancement of our natural resources, whilst allowing biodiversity to flourish on farms. This is one of the reasons why we are proud to say that all our British fruit and vegetables are grown to the LEAF Marque Standard."



Duncan Farrington, Managing Director, Farrington Oils Ltd

"The environment has always been at the heart of everything we do, which is why LEAF Marque is so important to our business and ethos. Our work with LEAF, specifically being LEAF Marque certified, has made it possible for us to become a global leader in sustainability with our range of Farrington's Mellow Yellow cold pressed rapeseed oil products becoming both carbon and plastic neutral."



Emily Rowbotham, Technical Manager, Fresh Direct (UK)

"Fresh Direct support LEAF Marque for our growers and suppliers because we were looking for a progressive way to support sustainability for our industry. Having LEAF Marque means we can ensure commitment to the environment and clearly see impact of positive change and continuous improvement throughout our supply chain."



Harry Wilder, Head of Agronomy, Barfoots

"We use the LEAF Marque process across our complex global supply base as a tool to address and move the farm sustainability agenda forwards. The Standard also provides us with a clear framework to communicate this to our customers in one clear message."

Welcome



Welcome to LEAF's 8th Global Impacts Report celebrating another great year of results and the growing impact of LEAF Marque certified businesses - delivering more sustainable farming in **27 countries** worldwide. In 2019, **43% of UK fruit and vegetables** were produced on LEAF Marque certified farms representing the eighth consecutive increase in this key metric.

As we enter the new decade, **environmental sustainability** and the urgent need for action to reverse climate change are widely recognised as priority issues, as is the health and well-being agenda. Consumers are increasingly searching for guidance and assurance that their purchasing choices, where we can all make a difference, can deliver a positive impact. In agriculture this means assurance of sustainable food supply systems and sustainable diets. In this context, it is very encouraging that the recently published UK Agriculture Bill, for the first time, places a duty on Ministers to **encourage environmental and animal welfare benefits**, and this is wholly consistent with government's commitment to reach net carbon zero by 2050. These are all matters which are central to the mission and objectives of LEAF Marque and all of our farmers and partners in the supply chain.

Against this background, LEAF Marque's farm focus is essential; our responsibility is to provide leadership, advice and the tools for farmers and growers to improve the sustainability of their operations and the means by which this can be evidenced in a **robust and independent** way for consumers and brands.

Our determination to measure impacts - a key distinguishing feature of LEAF Marque - is illustrated by this report which is rich in data, all of which demonstrate the journey of **continuous improvement** which defines "more sustainable farming". Over 40% of LEAF Marque farmers measured their soil organic matter content during 2019; this is an important focus of work as we consider how our farming practices can contribute positively to **carbon sequestration** - enabling agriculture to be re-cast as a solution to climate change, not the cause.

Recognising the **ever-increasing reach** of LEAF Marque both in the UK and worldwide, and the power of certification to bring about real and lasting change in food production, I take this opportunity to thank our many supply chain partners and farmers. It is their commitment and leadership which enables us, together, to continue to "raise the bar" for the good of our planet and future generations.

- **Tom Green**, LEAF Marque Chairman

Executive summary

This is a vital time for sustainable farming. Farmers are on the front line of climate change solutions – reducing carbon emissions, building healthier and more productive soils, delivering better air and water quality and enhancing biodiversity. The achievements outlined in this, our eighth **Global Impacts Report**, show that LEAF Marque certification is one of the most effective frameworks for mobilising advances in sustainable farming across the globe.

LEAF Marque certified farmers are making significant strides in supporting many of the **Sustainable Development Goals** as well as national targets set out in the UK governments **25 Year Environment Plan**. LEAF Marque certification offers a powerful tool to accelerate incremental improvements at an individual farmer level, which collectively, are driving profound reforms in food production. We are immensely proud of what our growers have achieved. Their efforts, coupled with the support of scientists, NGOs and retailers, is helping to ensure that we have more sustainable farming systems, now and for future generations.

Our global impacts

We now work with **936 businesses** in **27 countries**, representing a global hectareage of **358,455** covering **147 different crop types and livestock classes**. Whilst the arable and horticulture remain the strongest at 168,560 hectares and 166,652 hectares, other growth areas are grassland and biofuels. Staple crops like wheat, potatoes and barley represent the largest LEAF Marque certified crop area grown globally at 80,988, 32,249 and 30,390 hectares respectively.

Engagement with LEAF Marque across Europe remains strong. Certified crop area in the UK, France and Egypt has increased and we are also seeing growth in other regions with Tunisia and Zambia recently achieving their first LEAF Marque certified farms.

936

LEAF Marque certified
businesses





43%

of UK fruit and vegetables grown by LEAF Marque certified businesses

Our UK impacts

We continue to see a steady growth in the uptake of LEAF Marque certification in the UK, particularly within the horticulture sector. An impressive **43% of all UK fruit and vegetables** are being grown on LEAF Marque farms including 95% of lettuce, 93% of leeks and 92% of asparagus.

A shared vision

The adoption of the **LEAF Marque Standard** by producers and supply chain actors is a means to enable farmers to achieve sustainable farming but not an end goal. Farmers interact with and are influenced by their natural environment, the local community, markets, government policies and other actors in the supply chain.

The wider work of LEAF around knowledge transfer, education and public engagement is critical. Our farmer-led, bottom up approach, driven through our UK wide network of **Demonstration Farms** and **Innovation Centres** coupled with our wide reaching **education and public outreach programme** is ensuring we continue to make the biggest and best difference we can to farmers, the environment and wider society.



358,455

Hectares of crop on LEAF Marque certified businesses around the globe



Inspiring and enabling sustainable farming

LEAF Theory of Change

Vision

Mission

Core Activities

Direct Outputs

Desired Impact

Inputs from stakeholders



A world that is eating sustainably

Our mission is to inspire farming that is profitable, environmentally and economically sustainable

Integrated Farm Management (IFM) is a whole farm business approach that delivers sustainable farming:

- Delivering prosperous farming
- Enriching the environment
- Engaging local communities
- Demonstrating site specific and continuous improvement across the whole farm



LEAF Marque: increasing the impact of environmentally sustainable farming

LEAF Marque intended impacts are:

- Soil management to enhance soil health
- The resilience of cropping systems
- Management of water use and water quality
- Energy efficiency and energy use
- Waste management
- Management of livestock to enhance animal welfare
- And enhance the management of the farm business

LEAF Network

Technical Resources

Practical Events and Projects

Training

LEAF Marque System

LEAF Innovation Centres

LEAF Demonstration Farms

LEAF Sustainable Farming Review

Membership Support Services

Standard

Facilitating knowledge generation and exchange

Developing Opportunities

Increasing the adoption of more sustainable farming practices through Integrated Farm Management

Improving industry recognition and demand for sustainably sourced products

What is farming,
and living
sustainably

Support and enable sustainable
rural communities, enriches the
lives of local communities



(Linking
Environment
And Farming)

Implementation of more
farming practices through IFM.

are to improve:
quality and soil health

Water quality



Protect the environment

Protect native habitats and biodiversity

We work with the public and school communities to help children, young people and adults understand the connection between farming, food production and their daily lives.



LEAF Education



www.farmsunday.org

Extensive IFM
research and
case study
support
materials

Supporting
behaviour
change

Stakeholder
and industry
engagement

Monitoring
and
evaluation

Robust
Governance

Political
Engagement

Tripling LEAF's
capacity by
2021 to
deliver its
work and
outreach

Market
tem

Assurance

LEAF
Education

LEAF Open
Farm Sunday

LEAF Open
Farm School
Days

Farmer
Time

g Market
unities

Educating and Engaging the Public
in Sustainable Food and Farming

Leading a collaborative
approach within the
industry for better public
engagement and education
amongst future
generations

Positively influencing
people's attitudes towards,
and knowledge of food,
farming and the
environment



This year LEAF Marque has introduced a pioneering new approach within the LEAF Marque Standard, introducing **outcome-based control points to better demonstrate the impact LEAF Marque certified businesses are having.** With UK government discussions around ‘public money for public goods’ there could not be a more important time for those supplying into UK markets to really demonstrate what they can deliver.

Although not a new concept, farmers are likely to be less familiar with and practiced in demonstrating outcomes than reporting on practices. So LEAF has undertaken a series of interviews to evaluate how prepared farmers might be to monitor habitat and species on farm. Through a series of interviews, this study⁵ considered how LEAF members and LEAF Marque growers currently monitor and measure habitats and species.

Monitoring

Biodiversity monitoring of some form was undertaken by all farmers, with **38% of the UK farmers** interviewed taking part in the Big Farmland Bird Count.

Many also engage with experts for a range of advice on biodiversity as well as soil health and energy efficiency. Results from monitoring are often used as evidence for audits and rural payment schemes.

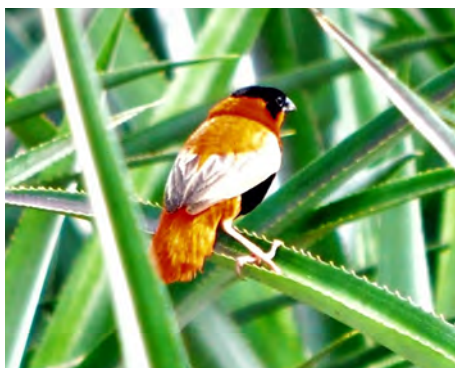


Species and habitats

A wide range of habitat could be found on the UK farms interviewed, including naturally occurring habitat, such as woodland, hedges, permanent grassland and ponds, and those introduced to enhance quality and species, namely field margins and corners, wild-flower, nectar and pollen strips, beetle banks, reservoirs and wild bird cover. LEAF Marque growers in Senegal, Egypt and Ghana highlighted the range of landscape and habitats they farm within, such as rainforests and deserts.



100% of LEAF members recognised the value of **increasing habitat area** and recognised the link between quality habitat and improvement in biodiversity. Farmers reported on a wide variety of species including birds, pollinators, mammals and reptiles. However, the barrier of weighing up the cost of increasing habitat against the need to improve productivity was noted.



Working with others

More than **75% of farmers** interviewed also **exchanged ideas about biodiversity** and wider topics with other farmers through joining farmer cluster groups, attending farmer days organised by their supply chain and LEAF, and discussing with neighbours.

Overseas farmers were less likely to engage in knowledge exchange, mainly down to geographical restrictions and lack of opportunities.

All farmers participating in some form of farmer knowledge exchange recognised the benefits that this support network can offer and valued the opportunity to learn from each other.



For nearly thirty years, LEAF has been developing and promoting **Integrated Farm Management (IFM)**. Faced with climate change and competition for scarce resources, IFM offers a coherent, whole farm approach, taking into account the entire food system as it finds ways to transform itself and be much more **resource efficient** while continuously **reducing its environmental impacts**.



The increasing political and climatic complexities faced by the agricultural sector requires a coherent and **integrated approach** to climate change, energy, and food security and one that also takes into account socio-economic factors. IFM offers farmers a framework on which to base decisions around the economic, environmental and social impacts of their farming practices.

Additionally, as farmers in the UK face changes to support mechanisms, IFM will help them demonstrate their positive contribution towards the delivery of ‘public goods’ and ecosystem services. On a global scale, our farmers are, collectively, contributing to **climate change mitigation** and critical sustainable development objectives.



Farmer led

LEAF is a practical, farmer led organisation. We work in partnership with innovative and forward-thinking farmers to accelerate knowledge and uptake of IFM. Our LEAF Network of **Demonstration Farms** and **Innovation Centres** ensures that new IFM practices, evidenced by rigorous scientific research, reaches farmers on the ground.



Growing knowledge and skills

We work with and for our members and growers to achieve a shared vision of a productive, resilient and sustainable agricultural sector. One that meets the expectations of the public – producing safe and affordable food, looking after our environment and valued countryside, and contributing to productive and robust economic growth.

Through our management tools, resources and training, we provide farmers with the skills, know-how and confidence to build the resilience and sustainability of their businesses. In 2019, **1,132 farmers** completed the **LEAF Sustainable Farming Review¹**, helping them monitor and evaluate their business over the nine sections of IFM.

We also deliver an ongoing **programme of training** for producers, advisors and auditors providing an in-depth analysis of Integrated Farm Management in different businesses and a sounding board and refresher on the aims and processes of **LEAF Marque certification** for those wanting to advise others or certify businesses.

1,132
users completed the LEAF Sustainable Farming Review





LEAF is about advancing better, smarter, more sustainable farming solutions. Farmers are at the front line of addressing climate change and at the heart of all we do. With the UK government committed to reducing greenhouse gas emissions by at least 80% by 2025, and global targets set by the UN at carbon zero by 2050, our commitment to supporting farmers to meet these targets, through Integrated Farm Management, is stronger than ever.

Supporting the farming industry towards achieving net zero targets will require vision, innovation and determination. The whole-farm framework of IFM is geared towards improving productivity, enhancing land management use to capture more carbon as well as boosting renewable energy. Our priority is to build farmers skills, know-how and confidence to meet these national and global targets and ensure they have access to the most up to date research and technological advances.

Our **Network of Demonstration Farmers** and **Innovation Centres** – made up of some of the UK's most forward-thinking farmers and leading research organisations, drive this 'science into practice'. Together they provide the scientific evidence around the economic and environmental impact of IFM and ensures it works at farm level.

9,528

Visitors to LEAF
Demonstration Farms





We work directly with farmers to make change happen. Throughout 2019 we have delivered technical **training events** for farmers, teaming up with industry partners to share expertise and resources. These have included BASIS accredited IFM and LEAF Marque training courses, waste management **Field Labs** delivered in partnership with WRAP and 3Keel as well as **technical workshops** focusing on sustainable soil, water and agroforestry.

As the UK departs the European Union, LEAF is committed to building on its well-established links with farmers and researchers across the member states and beyond. Our involvement in a number of Horizon 2020 projects continues as we work together to **enhance knowledge and understanding** around shared priorities including companion cropping and the impact of on-farm demonstration.

Building more robust, integrated and **regenerative farming approaches**, based on sound science and practical application, is an industry-wide responsibility. Through **LEAF Marque certification**, underpinned by IFM, backed up by our **demonstration, technical and education** activities, our farmers are at the front line of combating the effects of global warming and on-going human and planetary health issues.



402

Farmers, advisors, auditors attending LEAF training courses

Collaboration in the marketplace

Achieving more sustainable farming is a collective responsibility involving the entire food supply chain - farmers, suppliers, processors, retailers and consumers. It is a shared goal and a shared responsibility. Our long-established partnerships with retailers, independent food brands and grower groups are based on mutual recognition and mutual benefits.

Consumers want to know where their food comes from and its environmental credentials. LEAF Marque offers a **robust** and **independent** demonstration of sustainability commitments around low environmental impact farming practices.

Collaboration is at the heart of the Jordans Farm Partnership, which brings together an innovative blend of expertise to **benefit the British countryside**. All Jordans oat suppliers are LEAF Marque certified and have individually **tailored wildlife plans** created by the Wildlife Trusts. These plans are designed to boost important habitats and species and set gold standards for farm sustainability delivered through Integrated Farm Management.

During 2019, Jersey became our first **LEAF Marque Island** with all its dairy and arable farmers achieving certification. This is a hugely significant achievement – delivered through the vision and determination of **States of Jersey** and the commitment of the Island's farmers to challenge the status quo. We are now looking at replicating the model more widely in 2020.



Leading UK retailer, Waitrose have supported LEAF Marque since its inception in 2006 and **all their UK produced fruit and vegetables** are LEAF Marque certified. M&S have also included LEAF Marque certification as one of their **Plan A attributes** for all their UK fresh produce. We remain focused on consolidating partnerships across the food supply chain, particularly raising the profile of LEAF Marque within the **livestock sector**.

Working together with our valued industry partners, we are helping to shape the sustainable food agenda.





The Carbon Trust certifies that Tetra Pak has **reduced the carbon footprint** of this package by **22%** using plastics made from **sugar cane.**

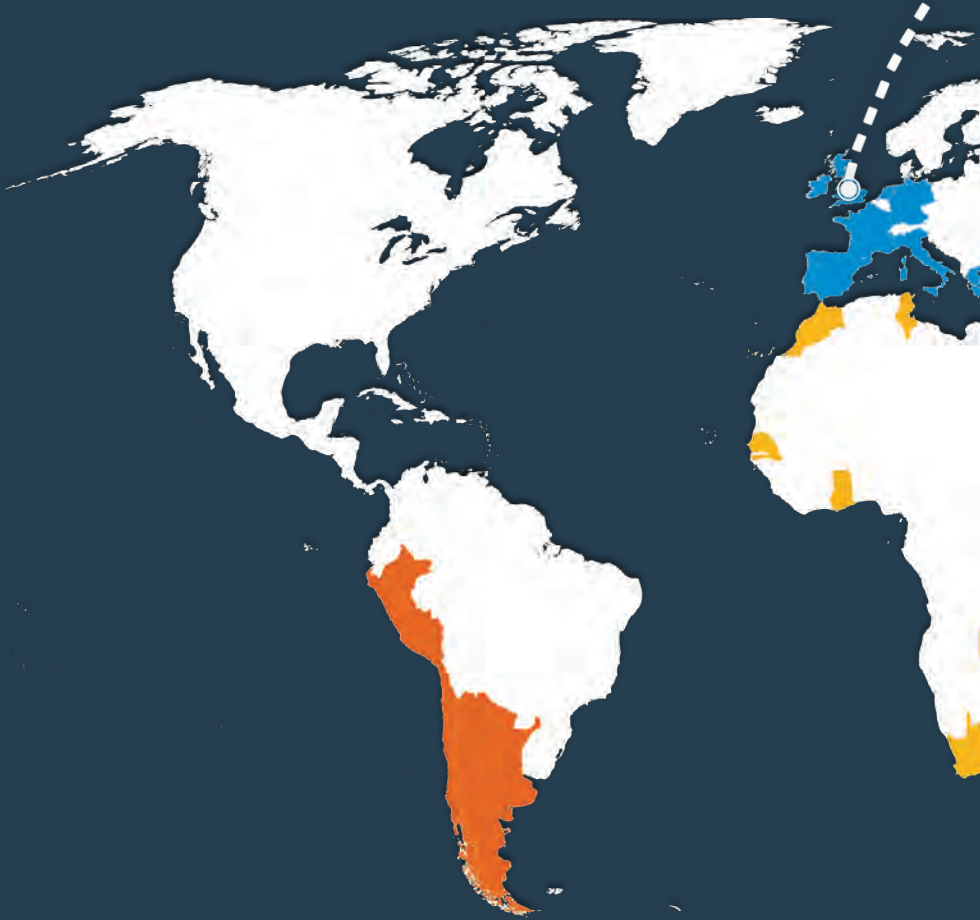
Our new pack's plant based material, from sustainable sources, contributes to lower carbon emissions.



LEAF Marque globally

27

Countries worldwide have LEAF Marque certified businesses



Wheat

80,988ha



Potato

32,249ha



Barley

30,390ha



Oilseed Rape

18,635ha



Lettuce

12,403ha



Permanent Grass

12,061ha



Sugar beet

10,936ha



Maize

10,669ha

Percentage of UK fruit and vegetable cropped area grown on LEAF Marque certified businesses



Lettuce
95%



Leeks
93%



Asparagus
92%



Broccoli
86%



Cherries
83%



Watercress
83%



Parsnips
79%



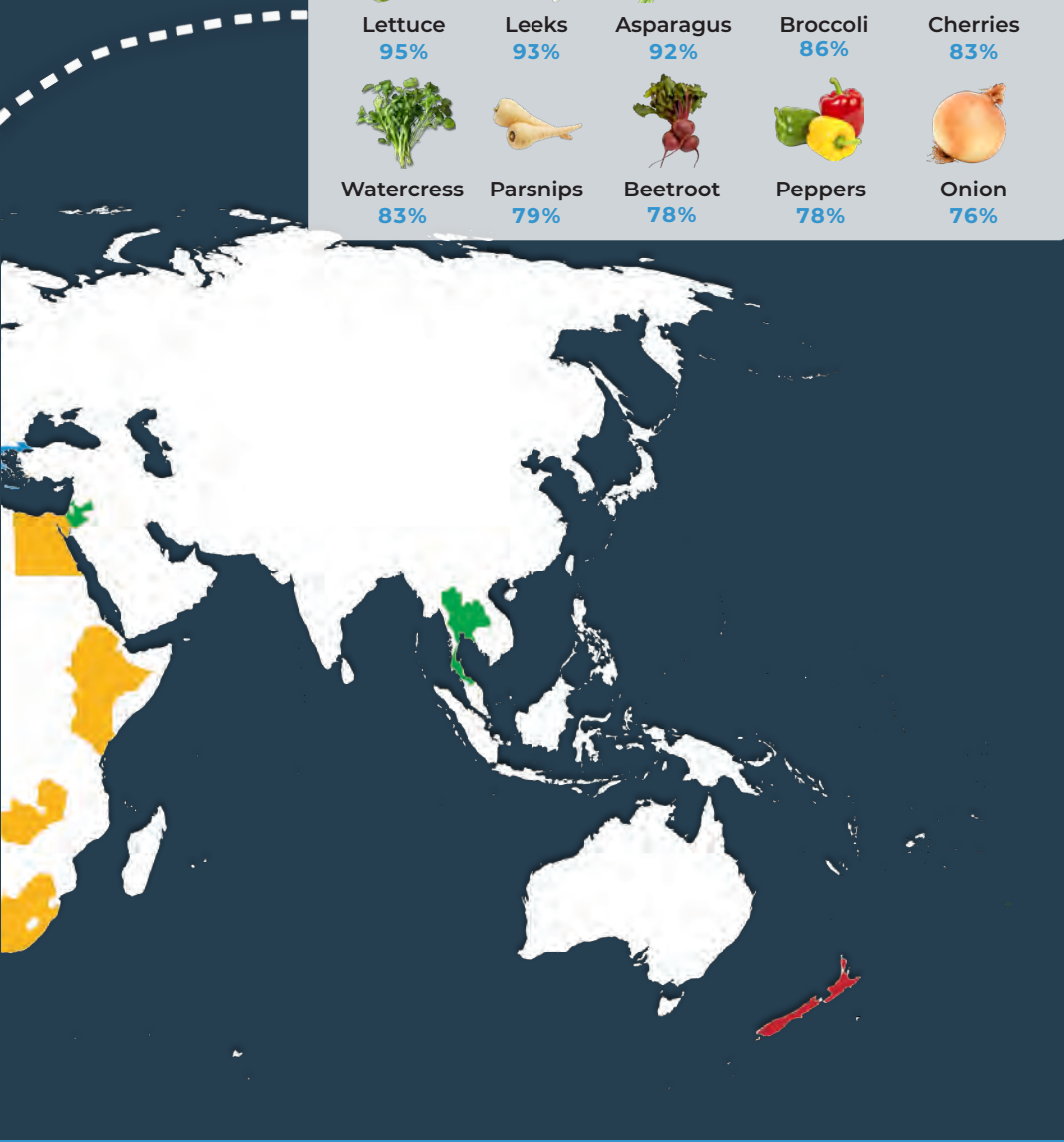
Beetroot
78%



Peppers
78%



Onion
76%



Onion
9,372ha



Broccoli
8,849ha



Carrot
7,370ha



Cauliflower
6,183ha



Sweetcorn
4,766ha



Spinach
4,395ha



Oats
4,386ha



Short-term Grass
4,257ha

Building connections with sustainable farming

Engaging people in farming and food production is vital to the future of the agricultural industry as well as for their own health and wellbeing. Strengthening connections with farming can help promote healthier lifestyles, drive demand for sustainably produced food, nurture an interest in the natural world and help build a sense of personal responsibility in protecting it.



Inspiring future generations

LEAF Education⁴ works across the education, farming and food sectors to inspire, engage and mobilise farmers and teachers about the value of farming in a learning context. We provide training and resources for teachers and help farmers navigate the world of education and support them in working with schools.

In 2019, we continued our focus on secondary schools especially with GCSE students. Our Key Stage 4 and 5 provision increased from 400 students in (2017-18) to **over 950 students**. One example of our successful work with this age group was the **#FarmMyFood** event designed specifically for GCSE students to see first-hand the processes involved in food production and help them understand the links between what they eat and the environment around them.

We also launched our national network of **Demonstration Schools**, set up to showcase best practice in food and farming education. The schools act as beacons showcasing examples of using food production, farming and the countryside as a core element of the school curriculum.

Farmer Time continues to reach out to future generations. In 2019, **9,000 school children** connected with farmers through video calls to learn about where the food on their plate comes from and the crucial role agriculture plays in their everyday lives.



During 2019, our team
of Regional Education
Consultants:

Directly worked with

16,368

young people

Engaged with

815

schools across the UK

and delivered activities over

34,295

learning hours

Sustainable communities

As the farming industry's annual open day, **LEAF Open Farm Sunday**³ plays a critical role in uniting the farming industry and bringing communities together. Over the last 14 years, it has enabled **2.5 million people** to visit a farm – vital to building trust and understanding in food and farming and the impact it has to all our lives. In 2019, for the fifth year running, **over a quarter of a million people** visited a farm. **365 farms** representing every farming sector took part with **91% of visitors** reporting they learnt something new and **93%** saying they **felt more connected** with the farmers that produce their food.

Building better connections with farming and food production can help drive more responsible purchasing decisions, promote healthier lifestyles and inspire citizens to take an active role in protecting the world around them.



Cherry Orchard, Hereford.

We are the only supermarket to guarantee
that all our UK fresh fruit and vegetable
growers are LEAF Marque certified to
ensure strong environmental standards.

WAITROSE
& PARTNERS



Organisation and Planning

Clear, focussed and strategic vision around the sustainability objectives of a farming business are key to Integrated Farm Management. This involves the whole team - managers, staff, suppliers and contractors.



As farmers look to **build resilience**, the need to step back from the everyday operations of the business, reflect and plan for the future is critical. The site-specific framework of IFM supports farmers in positioning all decisions within the context of the whole farm and evaluating their economic, environmental and social impact across the entire business.

Building knowledge, skills and commitment of staff around IFM is essential; each of the nine sections are interrelated and an understanding of how they work together is key. We continue to see more LEAF Marque certified businesses **driving forward staff capability** through ongoing training and knowledge transfer. This investment will be vital as the industry looks to more advanced, climate-smart technologies to boost economic and environmental efficiencies including geo-positioning, aerial vehicles, precision equipment and robotics.



72%

Staff on LEAF Marque certified businesses have appropriate awareness of IFM



Case Study: Team Training - Worth Farms

A priority on staff buy-in and team training is evident across Worth Farms, a Lincolnshire potato, cereal and vegetable business. With a team of 12 full-time and 15 part time staff, ensuring the whole team is on the same page with the businesses overall sustainability objectives and vision is very important.

Every six months, all staff receive an hour long briefing with colleagues from AH Worth Ltd. This provides an overview of operations, a financial update and a look at future priorities. The team also has the opportunity to ask questions and raise any issues. These briefings sit alongside monthly health and safety meetings, quarterly group health and safety meetings as well as daily farm staff meetings.

A profit share scheme has been introduced recently and is developing well. Long service awards are given and are very popular. Worth Farms are members of a local training group (Holbeach Marsh Training Group) specific to the farming industry and some of the team have also attended cross compliance and environmental training.

Staff are aware of the farm's general and specific policies around Integrated Farm Management (IFM). Regular training in the skills relevant to specific responsibilities is also important. Particular emphasis is placed on health, safety and legislation awareness as well as skills learning. Personnel and staff goals are assessed at least once a year and linked to broader business goals. Enhancement and enrichment of each member of staff throughout the business is core to driving forward its sustainability goals, vision and values.



Soil Management and Fertility

Healthy and productive soils are central to achieving a number of the 17 Sustainable Development Goals (SDGs). Soils sustain our food systems, filter and regulate the flow of freshwater, store vast quantities of carbon and support a myriad of beneficial organisms.



Protecting soil, building resilience and enhancing performance is crucial to **managing climate change**. Measures such as crop rotations, maintaining cover, appropriate cultivations, managing nutrients are all effective strategies to help improve the **carbon storage** capacity of soil.

LEAF Marque certified businesses where nitrogen efficiency per tonne product is measured

N 568

Organic matter is a key component of healthy, productive soils, contributing to its physical, chemical, and biological properties. Benefits of **soil organic matter** include improvement of **soil quality** and **structure** through increased retention of water and nutrients and reducing erosion, leading to improved water quality in groundwater and surface waters.

We continue to see a significant proportion of LEAF Marque certified businesses committed to building the soil organic matter status of their soils through **regular recording** and **monitoring**.



41%

LEAF Marque certified businesses recording Soil Organic Matter



Case Study: Soil Health - Overbury Enterprises

Jake Freestone has been a LEAF Demonstration Farmer at Overbury Enterprises on the border of Worcestershire and Gloucestershire since 2012. The 1590 hectares of land is on a slope of Bredon Hill, which at over 300 metres offers a range of gradients and diversity of soil types from heavy clays to Cotswold brash.

Jake has a focus on soil health and since 2015 the farm has become zero tillage, driven by the concern that soils had been mistreated through over cultivation. A wider rotation and the use of cover crops have also been added to the system to avoid long periods of bare soil, help retain the soil structure and increase biodiversity within the soil. Introducing cover cropping has helped to interlink the livestock system with the arable unit by having 1,200 ewes graze the cover crops allowing pasture land to recover in the winter months. Differing soil tests are performed throughout the autumn and winter months with nutrient samples taken after harvest, earth worm counts conducted in the autumn and soil organic matter tests taken in January.

Soil organic matter is monitored visually and by loss of ignition tests and potassium per manganate test which measures the active carbon portion of soil otherwise known as hummus. As plant and biological matter degrades, they become organic matter and over time it breaks down into hummus which is really stable and holds lots of nutrients.

Results have shown a rise in organic matter content since 2006 when soil organic matter was first recorded at Overbury. As an example, one sand and gravel field has increased from 1.20-2.86% over this time frame. Overbury continues to strive towards improving soil health year on year. Jake is also keen to engage members of his team in soil monitoring and recently invited LEAF on farm for IFM training to increase knowledge and team building.



Crop Health and Protection

Against a backdrop of uncertainty within agriculture, methods of pest and disease control that utilise a range of different plant protection methods are needed to maintain food security, crop yield and quality.



Integrated Pest Management (IPM) is a cornerstone of Integrated Farm Management and consists of a toolbox of techniques for sustainable crop production.

IPM applies a number of principles aimed at preventing and suppressing the build-up of harmful organisms; monitoring populations; using thresholds to determine when to intervene; minimising interventions and considering all options (including non-chemical), efficacy, resistance, economic and potential risks; and reviewing the success of your chosen strategy. Used together, they aim to ensure management and **control of pests, weeds and diseases** in crop production, maintaining economically acceptable pest levels whilst optimising the use of chemical inputs.

| 2017 | 2018 | 2019 |
|---------|---------|---------|
| 339,499 | 330,587 | 353,858 |

Hectares of crop on LEAF Marque certified businesses where steps are taken to minimise the damage to beneficial species and non-target organisms

Over the last three years, we have seen a **steady increase** in the number of LEAF Marque certified businesses carrying out IPM as well as continued commitment to new innovations and strategies that support on-farm biodiversity.

52%

LEAF Marque certified businesses carried out all 8 aspects of best practice IPM





Case Study: Integrated Pest Management: Prevention and Suppression - Elveden Estate

LEAF Demonstration Farm and LEAF Marque certified business, Elveden Estate, covers almost 10,000 hectares in the heart of East Anglia, growing a variety of root vegetable and cereal crops. Each of the eight areas of Integrated Pest Management (IPM) are important at Elveden, but it all begins with prevention.

Where possible, Elveden choose to grow varieties with resistant properties to pest pressures. Cultivation methods such as stale seed beds are used as a method to help control weed populations. This results in a reduced reliance on herbicides. Careful management of irrigation also contributes to pest control at Elveden. Managing soil moisture levels in conjunction with good soil structure helps minimize occurrences of waterlogged soils, where movement of nematodes is at its highest. Going hand in hand with prevention techniques is pest identification. Pests are identified by looking at past records, current observations, soil sampling, trapping and using forecasting predictions.

Stubble containing weeds and crop debris can also provide a good host for pests and pathogens. At Elveden, stubble and green bridges are managed to prevent build-up of these pests which can lead to outbreaks later in the season.

Management practices such as these are incorporated into the business, inherently reducing the risk of incidence and suppressing harmful organisms, reducing the chance of a single species significantly impacting crop production.





Delivering more sustainable farming through Integrated Farm Management advocates a 'reduce, reuse and recycle' approach to pollution control and waste management. We support farmers to view waste as a valuable resource which can have a positive impact on the overall economic viability of their businesses and lead to significant environmental gains.



Plastics remain a key focus. We continue to see our growers reducing their use with 90% recycling to dispose of on-farm plastic and many considering alternatives for example, by moving away from baled silage to clamp silage².

Our growers show ongoing commitment to measuring, monitoring and reducing their **environmental footprint**. This is helping to improve business efficiency and performance and informing overall business strategy.

36%
LEAF Marque certified
businesses using a carbon
footprint tool

50%

LEAF Marque certified
businesses carrying out waste
management best practice





LEAF really matters to the companies in Fresca Group. We're growers ourselves, and we buy fresh produce from many more farmers both in the UK and around the world.

We see first hand the benefits of integrated farm management and best practice at work.

The technical teams in our companies are strong advocates of the LEAF Marque scheme. We introduce, encourage and support growers with the scheme and indeed, we adopt IFM and LEAF principles on our own sites. That's why we're pleased to be associated with this publication and with LEAF.

To learn more about Fresca Group and our constituent businesses, please see www.frescagroup.co.uk



Animal Husbandry

Livestock production is a central element of sustainable farming – providing nutrition, fibre, environmental stewardship and energy production. It also has a critical role in combatting climate change; healthy, optimal performing animals produce less waste and pollutants leading to reduced methane emissions and grasslands used for grazing act as a vital carbon sink.



Good animal health and welfare is paramount, not only for happy and healthy animals but also for **successful livestock businesses** and a sustainable agricultural industry. In sustainable farming, nothing works in isolation. LEAF's IFM supports livestock farmers to consider the whole farm in an integrated way.

LEAF Marque certified businesses are embracing **science and innovation** alongside beneficial husbandry practices and **traditional methods** to maximise health and welfare. Through regular monitoring, development of Health Plans, staff training, careful breeding policies, detailed attention to housing, health and safety and disease control, they are **driving forward standards** in the livestock sector.

84%

LEAF Marque certified businesses with livestock who optimise health and welfare to maximise performance



86%

LEAF Marque certified businesses with livestock regularly monitor animal welfare indicators to assess performance

➤ Learn more with our Simply Sustainable Biosecurity booklet at leafuk.org/farming/simply-sustainable-series



Knowledge grows

Yara, the crop nutrition company



Visit our website to find out more



Soil Testing



Agronomic Advice



Fertilizer



Foliar Micronutrients



Digital Tools

Energy Efficiency

Reducing fossil fuel consumption and moving to renewable energy sources is an effective way to combat climate change. Improving farming's energy efficiency will enable farmers to produce the same quantity of food, or more, with less inputs, in smarter ways. This, in turn, will enable the sector to reduce its greenhouse gas emissions.



Our growers are increasingly turning to systems that track their energy use and Greenhouse Gas Emissions; with 36% using a **Carbon Footprint Tool**. It is this 'attention to detail' approach which enables farmers to identify specifically where savings can be made and how effective they are to carry out – they are controlling what they are able to control.

As well as monitoring energy use and costs, our growers are carrying out a range of practical, routine activities to increase efficiencies. They are ensuring vehicles and equipment are correctly maintained and serviced, checking tyre pressures, properly insulating buildings and switching off lights when not in use. A significant number are also turning to renewable sources of energy including wind and solar power, biomass and hydro-electricity.

334
LEAF Marque certified
businesses monitoring
energy consumption

54%

LEAF Marque certified businesses that have one or more types of renewable energy generation on farm





Case Study: Energy Efficiency - La Ferme, Jersey

La Ferme is a LEAF Marque certified dairy farm based in Jersey who have been working hard to improve on-farm energy efficiency. Energy efficiency is a key part of improving both economic and environmental sustainability through resource efficiency, cost savings and reducing wastes and emissions. The farm initially started by completing an Energy Audit and Action Plan which identified where energy is being used and highlighting areas for improvement in the future.

La Ferme installed a heat recovery unit within the milking parlour which has made significant improvements to the farm's energy efficiency. This unit captures the heat from cooling the milk and recovers the energy which can then be used to heat the water used for cleaning the parlour. The farm has saved 45% of energy use by implementing this system, which has reduced valuable energy from being wasted and subsequently reducing energy costs.

Another key aspect of farm management within Jersey is that land is split into small sections which are either rented out or swapped between farmers. This management practice does have its challenges as farmers have to travel between different pockets of land which increases fuel use. In order to improve fuel use efficiency, La Ferme are looking to carefully plan land management in order to use land which is closer together and based nearer to the home farm. This will improve fuel use and efficiency, reduce greenhouse gas emissions and save costs.



Water Management

Agriculture is the largest water user worldwide, accounting for 70 percent of total freshwater withdrawals. Improving agricultural productivity, while conserving and enhancing natural resources, such as water, is an essential requirement for farmers in order to increase global supplies of sustainably produced food.



Farmers are at the centre of any process of change involving **protection of natural resources**. Engagement and collaborative working sit at the heart of the Water Framework Directive and we continue to see increasing numbers of LEAF Marque certified businesses **working together** at a catchment level to drive locally focused decision making and action to address shared aspirations for the water environment.

A **range of measures** including cultivation techniques, attention to detail in fertiliser planning, storage and applications, restoration and maintenance of riparian areas, and controlled irrigation systems help to reduce both point source and diffuse water pollution from agriculture. LEAF Marque certified businesses are carrying out more **regenerative agricultural systems** to help build resilience against the increasing incidences of extreme water events like drought and flooding.



63%

LEAF Marque certified businesses that manage reservoirs for water quality, safety and/or wildlife

54%

LEAF Marque certified businesses working with others in the catchment to improve water quality and water management





Landscape and Nature Conservation

The need to find better ways to restore, maintain and enhance the natural environment is becoming more urgent. Landscape-scale conservation is an important approach to mitigating against, and adapting to, climate change. It delivers multiple benefits, not just for wildlife but also for people, communities and the wider economy.



IFM supports farmers in adopting a landscape-scale approach to conservation and places greater recognition on the wider ecosystem services that the **natural environment** provides which underpins our economy, society and individual health and well-being.

LEAF Marque certified growers use a toolkit of measures to **protect and enhance** diverse wildlife and landscapes, build more resilient water cycles and deliver healthy soils – always within the context of the wider farmed environment. Year on year, we are seeing a **significant growth** in the number of trees being planted, helping to increase biodiversity, provide shelter, prevent soil erosion, reduce flooding as well as creating a carbon sink.

13%
Average habitat area on LEAF Marque certified businesses

Key indicator species such as pollinators and farmland birds also continue to rise as our growers work towards large-scale habitat restoration and creation. The **7.1 million metres of hedges** on LEAF Marque farms support over 600 plants, 1,500 insects, 65 birds and 20 mammals species utilise UK hedgerow habitats⁶.

LEAF Marque certified businesses enhancing on-farm biodiversity

7.1 million metres of hedges
1,444 ponds
234,503 metres of habitat banks
610 reservoirs that benefitted biodiversity
462,487 in-field trees
1.87 million metres of non-hedge boundaries





Case Study: Boosting Biodiversity - Agricola Chapi S.A, Barfoots of Botley, Peru

Agricola Chapi S.A., part of Barfoots of Botley in Peru, see identifying and monitoring of species as key to their management and habitat improvement. The farm is part of a wider project to improve biodiversity in the region with support from the UK Darwin Initiative, Sainsbury's and others (through Royal Botanic Gardens, Kew).

The farm is located in a region of high degradation and low biodiversity, but through collaboration with this project, land has been dedicated to ecological forest restoration and a plant conservation centre in order to improve biodiversity and habitats for various species. The project is monitoring 70 plant species, 58 bird species, 3 mammals, 3 reptiles and more than 100 large insects to assess the success of restoring habitats. These species were also chosen because they are sensitive to disturbance, and threatened by habitat and groundwater loss, pesticide use and urban development., Through ongoing monitoring, Agricola Chapi have been able to base future business management decisions on how species populations are responding to habitat improvements.

By carefully considering how different management practices across all areas of Integrated Farm Management can impact on local wildlife, Agricola Chapi have become one of the highest centres for biodiversity in the region, with improved habitats and increasing species populations.



Community Engagement

The delivery of more sustainable food production relies on well informed people, aware of where their food comes from and how it is produced. Greater knowledge and understanding around these issues helps to build trust of what farming delivers, why it matters and its relevance to every aspect of modern life. The more people are aware, the more they are likely to value the food they eat; this, in turn, can lead to more sustainable food purchasing decisions.



As public interest in climate change increases, there will be an even greater need for **clear and meaningful conversations** between farmers and the public about the range of ecosystem services agriculture delivers in terms of productive soils, clean water and air, increased biodiversity, animal welfare and landscape management.

LEAF Marque certified businesses are engaged in a range of outreach activities including hosting **farm visits**, **giving talks** and **opening their farms** for LEAF Open Farm Sunday. We also see them supporting their local communities through for example road clearance and hedge trimming – all helping to create ‘good will’ and build deeper connections between farmers and citizens.

58,657

Visitors to LEAF Marque certified businesses



LEAF Marque certified businesses communicated through on-farm visits to:

13,235 school children

11,899 farmers

5,650 agricultural college and university students

3,868 industry representatives

2,678 community groups

We are **Proud To Be** the **World's First...**

- ✓ Carbon Neutral
- ✓ Plastic Neutral
- ✓ LEAF Marque



The environment is at the heart of everything we do.
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Delivering sustainable solutions

The climate and ecosystem emergency is one of the biggest challenges of our time. With the UK government committed to reducing greenhouse gas emissions by at least **80% by 2050** and global targets set by the UN at **net zero CO₂ emissions by 2050**, global agriculture is under an intense spotlight – not only in terms of its environmental impact but as part of the solution.

The impacts outlined in this report show the steps LEAF Marque farmers and growers are making to **reduce their carbon footprint** by minimising energy use, reducing waste, recycling products and taking proactive steps to boost biodiversity. They are collecting rainwater for irrigation and recycling water by filtering and purifying with UV light, they are measuring the organic matter status of their soils as well as diversifying into renewable energy, producing electricity, heat and transport fuels. They are implementing measures to optimise the health and welfare of their livestock. They are investing time in **building closer and richer links** with their **local communities**.

Overwhelmingly, the message of this report is one of transformation and positive change. The impacts and partnerships we feature link **LEAF Marque certification** to broader global shifts: the movement toward a world where agriculture is productive, efficient, and sustainable; where farmers are recognised and rewarded for their **sustainability commitments** and where rural landscapes and communities are healthy, resilient, and protective of ecosystems and wildlife.

LEAF Marque certification, built around the whole farm system of Integrated Farm Management, is a powerful catalyst for change. By **working with farmers to reward and incentivise change**, and with retailers and consumers to ensure a market for environmentally sustainable food, we are uniquely positioned to link landscape health with people's lives and plates. Yet there remains so much more to do.

Whilst the UK political context remains volatile and farmers braced for new trading and support arrangements, the Agriculture and Environment Bills placing farming at centre stage, the **National Food Strategy** working to drive far-reaching system change in food, farming and the countryside and Governments across the world seeking agreements for action laid down in the Sustainable Development Goals (SDGs), there is a real sense of the **urgent need for change**.

As we embark on an exciting new era for agriculture and as LEAF heads towards its landmark **30th anniversary** in 2021, we remain as committed as ever to bold, ambitious, creative and courageous approaches to more sustainable food production. At the end of 2020, we will be launching **our next 10-year strategy** taking us to 2031. Its three central themes are focused on backing farmer-led innovation, bringing together some of the smartest minds in agriculture; ensuring strong market incentives to drive uptake of **sustainable farming practices** and reconnecting people and nature to boost health and wellbeing.

But we cannot act alone. The **partnerships LEAF has built** over its nearly 30-year history will be key as we navigate the next critical few years.



The key data used in LEAF's Global Impacts Report 2020 includes information from the LEAF Sustainable Farming Review¹, LEAF's Annual Survey², LEAF Open Farm Sunday³, LEAF Education⁴ and Independent Evaluation⁵. The data is provided to the best of our knowledge.

¹LEAF Sustainable Farming Review

The LEAF Sustainable Farming Review is an online self-assessment resource for LEAF members to support their implementation of Integrated Farm Management. The LEAF Sustainable Farming Review replaced the LEAF Audit in December 2014. The completion of the LEAF Sustainable Farming Review is a requirement of the LEAF Marque Standard (v12.0 onwards) and this completion is independently verified. However, the specific responses within the Review are self-assessed and not verified through third party inspection.

The LEAF Sustainable Farming Review is composed of around 90 principles based around the nine sections of Integrated Farm Management along with further guidance information and links to support the user. Each question must be answered in one of the following five ways: Fully Achieved; Considerable Progress; Some Progress; Not Started; or Not Applicable. Additionally, the user indicates which of the supporting practices, which are associated with the principle, they carry out.

For the purposes of this report, analysis of this data only includes LEAF members who held a current, full LEAF Marque certificate at 31st December 2019 for the 2020 data.

Unless otherwise stated, the data shows the total crop area (not farm business area) for LEAF members that answered, "Fully Achieved". It should be noted that LEAF members who responded "Considerable Progress" or "Some Progress" may still meet the criteria required within the LEAF Marque Standard; however, this is not represented within this report. The LEAF Sustainable Farming Review can be completed at any point during the year.

We would like to thank all members that provided photography for this LEAF Global Impacts Report 2020.

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²LEAF's Annual Survey

Over the last 6 years, LEAF has circulated a repeat questionnaire to its members to ascertain their perception of their farms' sustainability. From 2017, this was titled the LEAF Annual Survey whereas in previous years it was circulated under the name LEAF Sustainability Survey.

³LEAF Open Farm Sunday

Every year, LEAF carries out an extensive analysis of farms participating in LEAF Open Farm Sunday events and some surveys of visitors. Farms participating are both LEAF members and non-LEAF members.

⁴LEAF Education

LEAF Education has carried out detailed monitoring and analysis of its education activities as recorded by the Regional Education Consultants. Data includes total number of people and schools educated, and total learning hours.

⁵Independent Evaluation

Data from the following independent evaluations were included: Monitoring Habitat and Species: A Review of Current Practices. (2020). Mike, C. LEAF, Warwickshire, UK.

⁶Graham, L. et al (2018) The influence of hedgerow structural condition on wildlife habitat provision in farmland landscapes

Full details of evaluator, methodology, key findings, conclusions, limitations and recommendation can be found in the full report. For more information, please contact LEAF (see back cover for contact details).



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