

Integrated Farm Management: A Guide



LINKING ENVIRONMENT AND FARMING
Integrated Farm Management



| | |
|---|----|
| What is Integrated Farm Management? | 2 |
| What does IFM deliver? | 3 |
| Organisation and Planning | 4 |
| Soil Management and Fertility | 7 |
| Crop Health and Protection | 10 |
| Pollution Control and By-Product Management | 13 |
| Animal Husbandry | 15 |
| Energy Efficiency | 18 |
| Water Management | 20 |
| Landscape and Nature Conservation | 22 |
| Community Engagement | 25 |
| What Can IFM Do For Your Business? | 28 |
| LEAF and IFM | 30 |

What is Integrated Farm Management?

Integrated Farm Management (IFM) is a whole farm business approach that delivers more sustainable farming. IFM uses the best of modern technology and traditional methods to deliver prosperous farming that enriches the environment and engages local communities.

With IFM attention to detail is key. Appropriate and efficient use of inputs, smarter approaches to business planning and the adoption of innovations and new technologies all contribute to increasing productivity whilst protecting valuable resources.

LEAF's IFM is made up of nine sections, shown below, which together address your entire farm business at a site specific level. An understanding of the importance of each section and the integration between them is essential for the effective implementation of IFM.

LEAF develops and promotes IFM and offers a range of services to help support farmers in delivering more resilient and sustainable farm practices. This Guide is designed to give you an overview of the principles involved in IFM and introduce some of the tools available to LEAF members.

"Using the framework of IFM, we aim to make the business robust and enable it to withstand the shocks associated with major changes in weather, policy and price of inputs and outputs"
 Nick Rowsell, John Rowsell Ltd,
 LEAF Member



What does IFM Deliver?

Sustainable farming delivers a site-specific farming system supporting the integration of farm economic viability, the environment and society over the long term. IFM delivers more sustainable farming by contributing in the following areas:

Economic Performance

- Promoting high productivity with low environmental impact.
- Tangible financial benefits delivered by increased attention to detail.
- Being prepared for future challenges and keeping ahead of legislation.



Environmental Quality

- Maintaining and enhancing the wildlife value and character of the countryside and landscape.
- Reducing the risk of pollution and environmental degradation.
- Monitoring and demonstrating improvements in the quality of soil, water, air, wildlife habitats and landscape.



Social Health

- Reaching out and connecting with suppliers, customers and the wider agricultural industry.
- Building public understanding, knowledge and trust in farming and the countryside whilst providing sustainable choices for consumers.



Organisation and Planning



Effective organisation and planning are the foundations to a successful Integrated Farm Management (IFM) approach. Setting objectives and monitoring the results provide the means by which the benefits of IFM can be quantified, demonstrated and continuously improved.

Use of management plans and reviews play an important part in the finance and profitability on the farm. Your staff motivation and involvement, family, crop performance, livestock performance and welfare, environmental commitment and engagement with local community are also important considerations.

Informed organisation and planning mean that record-keeping, staff training and engagement, market development and communication are considered and implemented to ensure the smooth and efficient running of the farm business. In addition, good organisation and planning will reduce business risk, whilst making it more resilient to change. While many of these considerations are obvious, having clear and documented procedures helps avoid mistakes and develop contingency plans and are the building blocks for IFM.

Key Practices for Sustainable Organisation and Planning

- **LEAF membership** – Making use of the resources available through LEAF, such as the LEAF Sustainable Farming Review, is a good start to help organisation and planning at a whole farm business level. Consider the benefits that becoming LEAF Marque certified might have on your business through improved market opportunities.
- **Business direction and development** – Having a clear direction for your business over a set time scale complete with development objectives, is important to allow the business to progress. Direction should be based on optimising the potential of your land, available resources and business.



Organisation and Planning

- **Financial planning** – Having consistent and accurate financial planning and controls in place is imperative when running a business. A good relationship with your accountant, bank and solicitor will reap rewards in this area. Where applicable, benchmark against past performance, industry standards and suitable peers.
- **Environmental Policy and Plan** – Setting a Farm Environmental Policy and then producing a Farm Environmental Plan based upon this is a helpful strategy to measure progress, inform the team and communicate farm policy to the wider community.
- **Staff** are one of the most valuable assets of a business and their involvement and welfare is important to maintain and improve business efficiency. Staff should be aware of the farm's general and specific policies, attend regular skills training where applicable, hold all required qualifications and be supported to fulfill their potential and benefit the business in the long run.
- **Customers and suppliers** – Identifying market outlets for produce prior to production is essential. Informing customers and suppliers about your farm's IFM policies is helpful to demonstrate the long term commitment of your business' sustainable objectives. Becoming LEAF Marque certified helps formalise your commitment to IFM and demonstrate it to suppliers and customers. Where possible obtain feedback and take action if required.
- **Health and safety** – Having appropriate health and safety plans and emergency procedures in place is important to protect staff and minimise on-farm risk. Taking practical security measures can also help protect your business from losses. A system to ensure food safety and quality will also help decrease potential sources of on-farm risk. Ensure contractors are kept fully informed of appropriate procedures and measures.



"Attending LEAF training and demonstration events with my staff helps them understand what direction I am taking the farm. For example, we listened to a talk on bumble bee plots. When I went back to the farm and put one in myself, they understood why I wanted to do it!"

David Clarke, Sparkenhoe Farm,
LEAF Member

Organisation and Planning

- **Farm buildings** should be managed in accordance with current legislation. When constructing new buildings, aim for energy efficient options and carefully plan the location to fit around current and planned infrastructure. Buildings should be regularly maintained and checked.
- **Farm equipment** should be regularly maintained and calibrated correctly. Review equipment efficiency annually to ensure machinery is working to its optimum. When purchasing new equipment consider energy and water efficient options to save on inputs.
- **Records** – Accurate records aid decision making, result in better attention to detail and should be an integral part of your farm planning process and review. Appropriate records should be kept on all parts of the farming business for at least five years. They should be used effectively for setting targets and improving performance and should include statutory records where applicable. It is also important to have a procedure for recording incidents such as spillages, and complaints.
- **Plans** – Developing management plans (such as Soil Management Plan and Livestock Health Plan) will help ensure there are sound operating practices in place from which to develop the farm business.

Next Steps

- The **LEAF Sustainable Farming Review** is an ideal place to start to assess your farm, benchmark and identify and plan areas for improvement. Look at the myLEAF area on the website for more details. www.leafuk.org
- LEAF also runs a number of technical events throughout the year, which are a great opportunity to share ideas and discuss options with other farmers before making changes.
- Consider becoming **LEAF Marque** certified to formalise your commitment to IFM and sustainable farming. Produce carrying the LEAF Marque logo will demonstrate your environmental commitment to suppliers and consumers.



Soil Management and Fertility



Soil is the basis of agricultural production. The conservation and improvement of this valuable resource must be among the highest priorities on any farm.

The availability of land and fertile soil is essential for healthy productive crops and livestock. Good quality soil also supports water management, reduces risk of nutrient run-off, acts as a carbon sink and promotes biodiversity.

Good soil husbandry includes the routine analysis, maintenance and improvement of physical, chemical and biological soil health. This helps ensure soils' long term fertility and builds organic matter, while reducing the risk of erosion, structural degradation, compaction and associated environmental concerns such as flooding and drought. Good soil husbandry increases yields and profitability.



Soil Management and Fertility

Key Practices for Sustainable Soil Management and Fertility

- **Assessing your soil health** using LEAF's **Simply Sustainable Soils** booklet will help identify areas for improvement. Use this assessment to produce a Soil Management Plan. The plan will help formalise ideas and actions for improving soil health. Within your plan, consider the impacts of your soil management practices on soil health and the risk of soil erosion and degradation.
- **Organic matter** – Aim to build-up and maintain organic matter in your soil across the rotation. This can be done through organic matter additions such as farmyard manure (FYM), compost, cover crops or straw incorporation. In addition minimal tillage techniques can protect organic matter within the soil and build earthworm numbers. Ensure organic fertilisers are managed and applied appropriately and nutrients supplied are balanced with artificial fertiliser applications according to crop and soil type.
- **Growing media** – Where alternatives to soil are used, ensure they are sustainably sourced.
- **Crop rotation** – The appropriate choice of a diverse crop rotation is probably the most effective means of managing soil fertility for optimal plant growth. Consider the benefits of grass leys and legumes as break crops.
- Consider the benefits of including **cover crops** within your rotations. Well-chosen cover crops can improve soil condition, reduce erosion risk and conserve fertility in the soil.
- **Cultivations** – Select appropriate cultivations for the soil type, conditions and cropping. Consider the use of minimum tillage or direct drilling to enhance soil quality. Correct machinery calibration, reducing passes, use of low ground pressure tyres and reducing machinery weight will help minimise unnecessary compaction.



"We have worked hard on farm, and with neighbouring farmers, to tackle soil erosion and run-off. The starting point was completing the LEAF Sustainable Farming Review and producing a detailed Soil Management Plan"

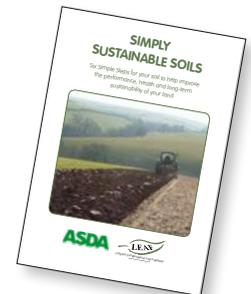
Nick and Claire Bragg, Frogmary Green Farm, LEAF Demonstration Farmers

Soil Management and Fertility

- **Timing** – Correct timing and flexibility of cultivations to reflect weather events are critical to maintain a good soil structure and avoid compaction.
- **Grazing** – Ensure livestock grazing is carefully managed especially near gateways, feeders and water courses and avoid overstocking. Exclude stock from poorly drained fields in wet conditions. Consider the use of soil aerators when pastures have been heavily grazed.
- **Nutrient Management Plan** – Producing a Nutrient Management Plan will help correctly target inputs both when and where they are required. The plan should include organic and inorganic fertilisers and take account of the previous cropping regime as well as the predicted yield from the current crop.
- **Nutrient application** – Apply nutrients in line with soil nutrient status (indices) and crop requirements to maximise soil health, avoid unnecessary costs and minimise the risk of run-off and pollution. Time fertiliser applications and calibrate spreaders to maximise crop uptake and reduce nutrient losses. Consider soil mapping and precision farming techniques to increase the site-specific benefit to your business.

Next Steps

- Assess soil health using LEAF's **Simply Sustainable Soils**.
- Look at the **Soil Case Studies** on the LEAF website to see what practices other farmers on your soil type are using and how these impact their business. www.leafuk.org
- Visit the LEAF **Video Library** on the LEAF website for short on farm videos on assessing and managing your soil.



Crop Health and Protection



Protecting crops from weeds, pests and disease is a routine part of farming in order to maintain yields and reduce avoidable losses.

Whilst protecting crops is essential, it is important to ensure that control is safe and effective in order to reduce the risk of water pollution and help preserve the abundance and diversity of native species.

Within an Integrated Farm Management (IFM) system, Integrated Pest Management (IPM) takes a holistic approach to crop health and protection combining cultural, biological, thermal, mechanical and, where necessary, chemical strategies to protect crops. It is essential to consider a range of approaches to ensure that the balance between optimising yield and quality, crop health, cost efficiency and environmental protection are maintained.

Key Practices for Sustainable Crop Health and Protection

- **Crop Protection Policy** – A policy is an essential start to effective crop health and protection.

Policies should take into account the principles of IPM. The policy should be reviewed and updated annually based on experience, advice and a drive for continuous improvement.

- **Pest management practices** – Within IPM it is essential to use a range of approaches to maintain healthy crops. Considering a range of options will allow sustainable and site specific solutions to be utilised. Cultural, biological, thermal, chemical and mechanical options should all be explored.



- **Crop varieties and rotation** – Selection of appropriate varieties and crop rotations for the conditions and soil type is an important and simple step to promote both healthy crops and weed management.

Crop Health and Protection



- **Planning** – Optimum timing of planting and sowing and using appropriate plant or seed spacing can promote early establishment and crop health. A well established and managed crop will be more competitive against weeds, more resilient to attacks from pests and disease and should require fewer chemical inputs.

“Our margins are a haven for beneficial species. Ladybird populations are relied upon to prevent pest outbreaks and control aphid populations whilst ground beetles encourage birds which help keep slug populations low. As a result we have noticed a reduced requirement for insecticides.”

Lord David Kennedy, Morrirston Farm,
LEAF Demonstration Farmer

- **Assess crop health** regularly with the help of a qualified agronomist to ensure potential problems are detected early. Crop monitoring should be done via regular scouting and observation. Consider whether investing in new technologies, such as drones, would be beneficial for your business. Attention to detail is critical and records should be kept of pests, protection measures and their justifications.

Crop Health and Protection

- **Protection and encouragement of beneficial species and natural predators**, especially pollinators, through margin management and other appropriate measures is an important aspect of IPM.
- **Decision making** – Making decisions based on monitoring, economic threshold values and warning systems is important to ensure best use of resources.
- **Resistance** – Ensure strategies are in place to avoid resistance. Where resistance is suspected consult with your agronomist for confirmation. Measures such as crop rotation, variety selection, stale seedbeds, certain cultivations and reduced and varied use of plant protection products can help minimise risk of resistance and enable chemicals to remain effective when they are required.
- **Application** – Storage, handling and application of plant protection products must all be done in accordance with best practice taking extra care to protect users and the environment. Ensure operators hold a recognised certificate, receive refresher training and that application equipment is tested annually.
- **Environmental impacts** – Consider the environmental impacts of all crop protection practices. Discuss with your agronomist how to minimise any risks to water, soil, air and non-target organisms.
- **Product storage** – Carefully consider crop storage techniques and processes to minimise post-harvest crop waste from the farm. Ensure regular, careful monitoring of any stored product to detect early warning signs of deterioration and pests.

Next Steps

- LEAF's guide to pollinating insects '**Great habitats, more flowers, better protection**' sets out some practical and cost effective ways for farmers to increase the number of pollinating insects on their land and is available on the myLEAF area on the website. www.leafuk.org
- Take a look at our **IPM information sheets**, available in the myLEAF area on the website for details on the 8 principles of IPM, IPM in practice and current research in the area.



Pollution Control and By-Product Management



Nearly every process and practice results in the generation of 'by-products' or 'wastes' and therefore poses a potential risk of pollution and a threat to the environment. Wherever possible you should reduce, reuse and recycle any wastes.

Well managed pollution control and by-product management is an important part of Integrated Farm Management (IFM) and will help make best use of resources, avoid pollution and save money as well as playing an important part in protecting water, energy, biodiversity and soil management.

In many cases farm 'wastes' are a valuable resource and this section focuses on their optimum use in order to make cost savings and decrease pollution risk.

Key Practices for Sustainable Pollution Control and By-Product Management

- **Farm Pollution Risk Assessment and Action Plan** – Identifying potential pollutants, high risk areas and mapping storage locations will form a good basis for a risk assessment. Producing an action plan based on your risk assessment will help ensure a prompt, effective reaction in emergency situations. The action plan should be shared with staff and contractors, reviewed annually and could include improvements to minimise impacts on air, water, soil and biodiversity. Fuel and oil tanks should be appropriately banded and capable of containing any spillage. Chemicals should be stored in a marked, dedicated and secure store.
- **Reduce** – Waste reduction can be achieved in numerous ways. Planning the purchase of goods is an important preliminary step. By minimising the quantities of waste or by-products produced, you can save money on managing storage, handling and recycling/disposal.

"We use coir substrate for growing our tomatoes as it can be composted with the tomato plant. The compost is then used in further production. This is especially important for us as Isle of Wight growers as we don't have access to the recycling facilities available on the mainland."

Brian Moralee, Wight Salads,
LEAF Member



Pollution Control and By-Product Management

- **Reuse** by making efficient use of by-products on farm. Try to optimise the use of valuable by-products, such as manures or slurries, and incorporate crop residues and compost. Analyse the nutrient content of organic amendments and use them in line with your Nutrient Management Plan. Separating clean and dirty water in livestock farm yards and storing dirty water safely is also important to minimise pollution risks.
- **Recycle** waste, such as plastics, where possible and dispose of non-recyclable waste in accordance with best practice. Local recycling schemes can be a good way to dispose of waste. Separating and ensuring cleanliness of waste makes it easier for recyclers to reuse the product and place back on the market. Ensuring wastes are disposed of without risk to water quality is important to minimise pollution risks. Take particular care with sprayer washings and consider the benefits of a biofilter or biobed.
- **Greenhouse gas emissions (GHG)** (e.g. methane from cattle, nitrous oxide from fertilisers and animal slurries and carbon dioxide from fuel emissions) – A carbon footprint and carbon budgeting can be useful tools to help you investigate your GHG emissions. Consider ways to decrease net emissions by using resources more efficiently, carefully selecting livestock feed and variety and looking for possibilities to sequester carbon and generate renewable energy.
- **Drainage ditches** – Regular inspection of water quality in drainage ditches and water courses around your farm is a straightforward way to monitor on farm pollution. Pay particular attention after recent field operations. Your action plan should include how to deal with potential issues and avoid pollution occurring.



Next Steps

- Take a look at the LEAF **Video Library** on the website to see a range of videos about Pollution Control and By-Product Management. www.leafuk.org

Animal Husbandry



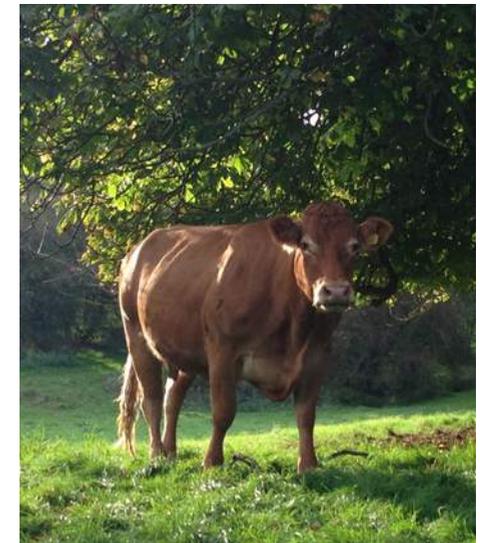
Optimising animal welfare, herd or flock health status, and feeding are essential to any livestock business.

Appropriate animal management can also contribute to improved grass production and reduced sward restoration costs. Suitable grazing management can help reduce topsoil and nutrient losses, improve the quality of water courses and enhance biodiversity. With appropriate planning and management, manures and slurries represent a valuable resource and can form a key fertiliser input, significantly reducing production costs.

Animal health has a big impact on production, a key aspect of any successful livestock business. Poor animal husbandry is not only detrimental to animal welfare, but can also be at the root of a variety of production, environmental and food safety issues.

Key Practices for Sustainable Animal Husbandry

- **Livestock Health Plans** should be produced in consultation with the farm vet and are a useful guide to ensure stock health is appropriately managed. Careful planning can help prevent the incidence of disease whilst correct and timely administration of vaccines and appropriate use of medicines is vital for healthy productive livestock.
- **Breeding** – Breeding policies are a useful tool to ensure that full advantage of available genetic potential is taken to meet market requirements and fertility is maintained. Consider the use of estimated breeding values (EBVs), artificial insemination (AI) and embryo transfer (ET) to help boost the genetic potential of stock. Keeping full records will assist in selecting the best stock to be kept as replacements while enabling unwanted traits to be eliminated.
- **High standards of animal welfare** – Ensuring the “Five Freedoms” of animal welfare are adhered to is the essential starting point to upholding welfare: freedom from hunger and thirst; freedom from fear and distress; freedom from discomfort; freedom from pain, injury or disease; and freedom to express normal behaviour.



Animal Husbandry

- **Housing** – Adequate ventilation, clean and dry bedding, suitable shelter for rest and protection from extremes of weather are basic principles of good housing. Ensuring systems are in place for emergencies are an important precaution. Buildings should be free from vermin and ensure that there is adequate waste and effluent drainage discharging safely without causing pollution.
- **Health and safety** – Safe livestock handling facilities are essential. Train all relevant staff appropriately and ensure they are aware of potential risks. When planning facilities ensure the safety of staff, livestock, vets and visitors are all considered.
- **Disease control** – Assessing and minimising disease risks is vital, and appropriate biosecurity measures should be in place. A period of quarantine may be useful before introducing new stock to the herd or flock. Managing immunity and keeping vaccinations up to date and recorded is essential. Ensure staff are aware of potential disease risks to livestock.

"The cornerstone of our farming business is the health and welfare of our livestock as this is closely linked to performance, yield and economic viability. Following LEAF's IFM principles provides a useful framework to meet these objectives."

Robert Heliwell, Upper Booth Farm, LEAF
Demonstration Farmer



Animal Husbandry

- **Veterinary medicine** – Appropriate management, storage and disposal of medicines will help reduce unnecessary waste and risks to livestock and staff.
- **Grazing** – Ensure appropriate grazing levels depending on available forage. Aim for healthy soil to produce quality grazing. Consider the benefits of incorporating alternative forages such as clover or lucerne into grassland. Stocking density must also allow suitable area for stock to rest and minimise the risk of infection and disease.
- **Feed/Forage** – Producing a feed plan that is linked to grazing availability is a helpful tool to ensure nutritional requirements are met and feed is not wasted. Purchasing assured feed and appropriate storage will ensure stock receive nutrients as expected. Using farm produced feed can reduce costs without compromising quality.
- **Manure outputs** – Well-designed systems for slurry and farmyard manure (FYM) collection, transfer, handling, storage and application are essential to ensure the benefits of these organic resources can be fully realised.
- **Mixed systems** – There are a number of beneficial impacts available through introducing livestock into an arable system. These include: readily available straw for bedding, the potential for efficient utilisation of manures and the use of grass leys to improve soil quality. Successful integration can result in synergies that directly impact production, however the challenges of available market and business infrastructure should be fully considered.

Next Steps

- Have a look at the LEAF **Video Library** on the website for our feed plan video: www.leafuk.org
- Take a look at our **Soil Case Studies** to see the role animal husbandry plays within the whole farm, available in the myLEAF area on the website.



Energy Efficiency



Awareness of sustainability issues and responsible management of natural resources are important within Integrated Farm Management (IFM).

Efficient use of energy on farm will help save costs, use resources more efficiently and reduce waste, as well as contributing to an overall reduction in greenhouse gas emissions from agriculture.

Careful use of inputs, appropriate tillage, reduced reliance on fossil fuels, and striving for optimum instead of maximum yields will all help improve energy efficiency and contribute towards maximum return in the long run.

Key Practices for Sustainable Energy Efficiency

- **Monitor energy use and cost** – Recording the entire farm's energy use at regular intervals is an essential step towards improving energy efficiency. Allocating energy usage to different enterprises can be a helpful process to ensure inputs are being prioritised. Ensure energy usage is compared with previous years' usage to monitor progress. Take account of actual energy consumption as well as total energy costs to account for energy price changes. Monitor the proportion of renewable energy used on farm annually and aim to increase this proportion year on year.
- **Manage activities in consideration of energy use** – Having a programme in place for maintenance and repair of buildings, vehicles and equipment is a helpful way to make sure you are not wasting energy. Cultivations can be one of the biggest energy uses on farm, so ensure equipment is correctly calibrated, working to maximum efficiency and avoid unnecessary cultivations. If appropriate, reuse heat energy and ensure insulation is installed where required.
- **Manage business development in consideration of energy use** – Aim to review each enterprise in respect of energy use annually. Try to involve staff in identifying energy saving ideas to ensure strategies operate across the farm. Employing an external consultant to review measures taken can be a helpful way to monitor progress. Try and consider energy efficiency when purchasing new equipment.



Energy Efficiency

- **Renewable energy** – There are a wide range of options available for on farm renewable energy generation. Consider what works for the business and whether energy generation from renewable sources is appropriate and cost effective. Options might include solar, hydroelectric, wind, geothermal energy, biomass production and anaerobic digestion.
- **Carbon footprint** – Carbon footprint tools and carbon budgeting can provide valuable information about energy use on farm. They can also form a useful standard to benchmark against in future years.
- **Nitrogen fertiliser** production requires a large amount of energy. Optimising inputs through precision farming can reduce the whole farm energy usage by dropping requirement for Nitrogen fertilisers.

"We set clear targets to reduce emissions through careful monitoring, investment in improved technology, use of variable frequency drives on pumps and fans and regular servicing of farm machinery to ensure optimum performance"
Andrew Francis, Elveden Farms,
LEAF Demonstration Farmer

Next Steps

- Take a look at the myLEAF area on the website for some top tips on reducing energy usage. www.leafuk.org
- Look out for our LEAF's technical events, publicised via LEAF e-brief for opportunities to get greater insights into renewable energy in use on farm.

Water Management



Efficient water management is a core component of LEAF's Integrated Farm Management (IFM). Managing water wisely as well as assessing and enhancing the efficiency of on farm water use saves money and helps provide for future needs.

Good water management practices help protect water sources and improve water quality. In particular good water management will contribute towards reducing run-off and pollution, improved field access and soil workability and restoration of wetland areas.

Sustainable management of water in agriculture is critical to increase agricultural production and maintain the environmental benefits and social requirements of water systems.

Key Practices for Sustainable Water Management

- **Water Management Plan** – Producing a plan including maps of water pipes and areas of surface and groundwater protection is a good starting point to improving water management. Ensuring the plan is understood by all staff and reviewed annually will help it be as effective as possible. Ensure the plan is appropriate at the catchment level and addresses any wider issues in your area.



- **Plan based action** – Utilise your Water Management Plan to identify areas for improvement. Water meters, readings and records are helpful tools for this as well as the water management resources available to LEAF members.
- **Water storage and sourcing** – Consider the timing of water requirements compared with water abundance to help ensure water availability for abstraction and storage requirements. Harvesting rainwater and water storage reservoirs are other useful techniques to maximise water availability. Manage reservoirs for water quality, safety and wildlife.
- **Irrigation** – Scheduling irrigation, measuring water use efficiency and selecting irrigation methods based on application accuracy and placing are good ways to improve irrigation efficiency for crop production and to reduce soil damage and losses. Monitoring and recording irrigation applications through tools such as moisture probes, are essential to drive improvement. Matching irrigation rates to crop requirements and rainfall will ensure that resources are utilised efficiently.
- **Monitoring** – Water quality should be appropriate for purpose and monitored accordingly to ensure this.

Water Management

- **Land drainage and ditches** – Good drainage reduces the risk of compaction and soil damage. Maintaining existing drains will help ensure they remain free-flowing. Visually monitor and record the quality and condition of drainage systems across the farm to ensure ditches do not fall into disrepair. Try and restrict the timings and frequency of watercourse management to allow biodiversity and natural processes time to adjust.
- **Drainage from farm building areas** – Farm buildings and concrete yards can produce large volumes of effluent and dirty water. Where possible enhance existing buildings and ensure considerations are made for new developments. For example, minimising travel distance for slurry and collecting dirty water close to source should be important considerations when constructing buildings. Covering yards to minimise the volume of dirty water and ensuring drainage systems allow the separation of clean and dirty water are also important measures when planning buildings.
- **Water saving** – Throughout the farm, try to reduce water use where practical, reuse water where possible and recycle water where appropriate.
- **Soil management** – Soil and water management are intrinsically linked. Improving the water holding capacity of the soil by increasing organic matter content can help reduce run-off and improve workability. Good drainage design and management is another important measure to reduce run-off risk.

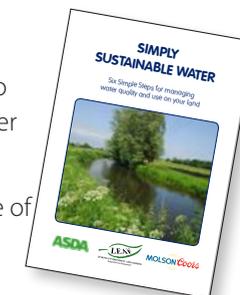
"For every rose we're producing we know exactly how much water it took to produce it and we're trying to reduce it"

Peter Kamuren, Ravine Roses,
Kenya, LEAF Member



Next Steps

- Read LEAF's **Simply Sustainable Water** for Six Simple Steps for managing water quality and use on your land. For the booklet and to hear how LEAF Demonstration Farmer, Jake Freestone manages water visit the LEAF website. www.leafuk.org
- Take a look at the LEAF **Video Library** on the website to see a range of videos about Water Management on farm.



Landscape and Nature Conservation



Care for the environment is at the core of LEAF's Integrated Farm Management (IFM) and should be actioned throughout all other sections of IFM. For many farmers the demonstration of this care is a living farm landscape which will enhance the public's experience of the countryside.

Responsible management of the landscape leads to enhanced biodiversity. It can also help protect soil and water and improve land value, farm image and market opportunities. In addition, environmental land management will support a range of ecosystem services that benefit both the farm and the surrounding area.

It is important to remember that landscape and wildlife are like any other aspects of the farm; what is achieved depends on the starting conditions, the capability of the land and the effort invested. The rewards can be high providing the activities include the following key practices.

Key Practices for Sustainable Landscape and Nature Conservation

- **Landscape and Nature Conservation Audit** – Knowing the biodiversity and habitats on your farm is a good starting point. Retaining, protecting and enhancing existing wildlife rich habitats are critical first steps towards successful environmental management.
- **Landscape and Nature Conservation and Enhancement Plan** – Creating a plan to encourage greater biodiversity is a helpful way to monitor progress and provide focus. The plan should be integral to your farming system and appropriate to your farm's environment and the priority species present in your area. The plan should be reviewed annually to help ensure progress.
- **Staff involvement** – Actively involving staff and contractors in conservation planning and implementation will ensure more effective practices. Involvement helps create ownership of environmental improvements and thus it is important to ensure environmental information is available to all staff.



Landscape and Nature Conservation

- **The Big 3:** Birds are good indicators of the environmental health of your farm. In order to help birds on your farm, ensure the following are provided – safe nesting habitats, winter food and summer food for adults and chicks.
- **Aim for bigger, better and more connected habitats across the farm to promote and protect biodiversity.** Creating and maintaining a range of field margins around all fields is a great way to improve connectivity across the farm and provide valuable habitats. Flower-rich habitats are particularly important for pollinators and can be created using pollen and nectar mixes. Beetle banks through fields of more than 20ha are another way to provide for biodiversity. Habitats in cropped land and grassland are equally valuable. Provide a mosaic of habitats and beneficial invertebrates will thrive.
- **Landscape scale conservation** - Further benefits to biodiversity can be created by working with bordering or neighbouring farms. Combined efforts can create larger, more connected habitats and more stable populations.

"We continue to maintain a range of habitats across the farm and have created a 'Green Grassland Corridor' through the middle of the farm to allow for safe wildlife movement by linking vital habitats"

Brian and Patrick Barker, E J Barker and Sons,
LEAF Demonstration Farm



Landscape and Nature Conservation

- **Field boundaries** – Retaining hedgerows and traditional boundaries where possible is important to maintain current habitats for natural fauna and flora. They also form valuable corridors for wildlife. Cutting hedges on longer rotations increases the abundance of flowers in the hedge which benefits pollinators early in the spring.
- **Monitoring** the environment will help you assess and demonstrate your environmental impacts. Sufficient monitoring will also help measure the progress of different practices to help focus efforts effectively. Try to include surveys of bees and other pollinators and invite local experts to help wherever possible. Surveys can be a great way to involve the public to produce some “citizen science” via mechanisms like LEAF’s pollinator survey promoted for Open Farm Sunday.
- **Time and plan hedge cutting and ditch clearing on farm** – Avoid clearing ditches and trimming field boundaries or margins during nesting periods. Adhere to appropriate legislation when cutting hedgerows and avoid doing so before the fruit has been taken. Take care when carrying out these activities to consider other fauna and flora. Clearing on-farm ditches on one side each season can help biodiversity in the ditch adjust to the changes.

Next Steps

- The **LEAF Green Box** is a simple, step by step approach to monitoring the environment on your farm and is available to all LEAF members. Have a look at the website for more details. www.leafuk.org
- Assess your farms Biodiversity using LEAF’s **Simply Sustainable Biodiversity**.
- For specific advice on pollinating insects for farmers, take a look at **“Great habitats, more flowers, better protection”** available on the myLEAF area on the LEAF website.



Community Engagement



There are so many good reasons for building strong community connections. Through these networks farmers can explain how they farm and use Integrated Farm Management (IFM).

A good relationship with the local community forms a shop front for the business. All other aspects of IFM should feed in to what is shown and shared. In this way, trust is built in businesses and farming as a whole.

Enjoying explaining farming to the public, suppliers and influencers will help others better understand agriculture and the rural environment. Being connected to your local community and a wide range of people will help address their concerns about the countryside and enable them to become more connected with their food.



Community Engagement

Key Practices for Sustainable Community Engagement

- **Staff and suppliers** – Good community engagement starts within a business. The importance of effective and positive internal communications and strong relationships with staff should not be underestimated. Good relationships with your suppliers and customers are another important part of business community engagement.
- **Work with other local farmers and landowners** – Working with others in your catchment can have benefits for water quality for example. In addition, joint efforts to protect key species can reap greater rewards than individual efforts.
- **Communicate and work with the local community** – Showing and explaining a balanced and positive approach to farming is important. Host farm walks, hold an Open Farm Sunday event, offer yourself as a speaker and contribute (financial or in-kind) to conservation and environmental schemes to effectively engage with local initiatives.
- **Build and maintain goodwill** – Measures like ensuring roadways are clear and improving road safety through trimming hedgerows are good ways to ensure goodwill locally. This may produce immediate returns and reap further benefits in the long run.
- **Promote your business and the farming industry** – Promoting good news stories about farming through contributing to social and local or national media are great ways to promote your business. These measures combined with hosting farm visits can help to establish previously untapped local markets for produce. Explaining your involvement with LEAF and LEAF Marque is another great way to share stories around sustainable farming. Ensure you are making the most of outlets like Twitter, facebook and blogs.
- **Develop communication skills** – The benefits of being able to communicate effectively in person, in print, in the broadcast media or online, on screen or in social media to a wide range of audiences cannot be underestimated. Make use of services like LEAF's Speak Out communications training to ensure you have the right skills and techniques to get the right messages across.
- **Host visits to a range of audiences** to ensure farming messages are shared with all parts of the community. Try to include visits from food retailers, school children, agricultural colleges, community groups, politicians and disadvantaged groups in your annual schedule as well as take part in larger scale events like Open Farm Sunday and Open Farm School Days.

"At Loddington the local community is a valuable asset to our business, whilst our engagement with them is important the assistance we receive in return is invaluable."

Phil Jarvis, The Allerton Project,
LEAF Innovation Centre

Community Engagement

- **Adapt visits to your farm and to the groups involved** – Avoid using jargon where possible and make visits hands on. Making sure you ask for and act on feedback is an important mechanism to ensure visits remain enjoyable and memorable. Ensure your farm has appropriate Health and Safety measures in place to host visitors.
- Where appropriate, make the most of **public rights of way** by keeping them clear and ensuring stiles and gates are in good condition to encourage responsible walkers. Use LEAF noticeboards to help walkers learn more about your farm.



Next Steps

- **LEAF's Open Farm Sunday** is the farming industry's national open day! It is a fantastic opportunity to open your doors to the public: www.farmsunday.org. For more information on opening for Open Farm Sunday and other groups, take a look at the Open Farm Sunday Handbook available on the website.
- The **Speak Out** toolkit helps farmers improve their communication skills in getting their message across to other farmers, the industry and to the public.
- **LEAF Noticeboards** are a fantastic and straightforward way to inform visitors to your farm. LEAF members get a 30% discount and for more information see the LEAF website. www.leafuk.org
- **LEAF's Open Farm School Days** are a great way to get school children out on to farm. Visit www.farmsunday.org
- **LEAF's Virtual Farm Walk** is an on-line visit to a farm. Like a real farm, LEAF's Virtual Farm Walk is a fun and accessible way for children to find out about farming. Hosted by two real farmers and designed for 7-11 year olds, it can be used during talks to engage young children with farming and where their food comes from. Visit www.virtualfarmwalk.org



What can IFM do for your business?

Since the early 1990s farmers have increasingly been adopting more sustainable farming practices, in particular, through the adoption of Integrated Farm Management (IFM). Different farmers have found adopting IFM through LEAF membership is of benefit to their business in many different ways, some of which you may not have considered, here are just some of them...

Improved performance

- Improved profitability
- Greater attention to detail
- Enhanced environmental habitats and features
- Greater sense of pride in farming and agriculture as a whole

Technical excellence

- Keeping abreast of innovation
- Informed discussion around existing and new technologies
- Shared learning
- Smarter approaches through discussions with scientists, farmers and industry

Compliance

- Keeping up to date with legislation
- Gaining exemptions and equivalence to compliance through earned recognition
- Meeting market requirements

Better public understanding

- Gaining local trust and understanding
- Identifying volunteers, expertise and helpers in the local community
- Building the goodwill bank through greater trust and understanding

What can IFM do for your business?

Market opportunity

- Meeting market requirements
- Demonstrating commitment and your personal approach to more sustainable farming techniques to set your business apart from others
- Seeking out new added value opportunities to your business
- Making a stronger case for your business to secure new opportunities such as for sales, renting land, and other negotiations

International Recognition

- IFM is increasingly recognised around the globe as the route to more sustainable farming.
- LEAF works globally with partners and organisations to further promote IFM.

Improved credibility

- Meeting robust and internationally recognised standards
- Being a good farmer and demonstrating it!

LEAF and IFM can support you in making your business more resilient, fit for the future and purpose built to address tomorrow's challenges; a business which is prosperous, enriches the environment and engages local communities.



LEAF and IFM

Our vision... a world that is farming, eating and living sustainably

Our mission... to inspire and enable sustainable farming that is prosperous, enriches the environment and engages local communities

LEAF (Linking Environment And Farming) is the leading organisation promoting sustainable food and farming. We help farmers produce good food, with care and to high environmental standards through Integrated Farm Management (IFM), identified in-store by the LEAF Marque logo. We are looking to contribute towards the achievement of our vision through three areas of work:

- **Facilitating knowledge generation** and exchange amongst farmers and researchers through our network of LEAF Demonstration Farms and Innovation Centres, farm business management tools and technical events.
- **Developing market opportunities** through the LEAF Marque assurance system – the leading sustainable food label.
- **Engaging the public in sustainable food and farming** through Open Farm Sunday, Open Farm School Days and educational materials.



LEAF is part of a Pan-European partnership EISA (European Initiative for Sustainable Development in Agriculture). As a LEAF member there are a number of resources available to you to help you deliver more sustainable farming through IFM. These range from the specific tools mentioned throughout this guide which help with individual aspects of IFM to a selection of over-arching tools for the whole farm such as:

LEAF Sustainable Farming Review

- The LEAF Sustainable Farming Review provides a comprehensive health check of your farm and offers benchmarks and action plans to focus the business for the year ahead.
- The LEAF Sustainable Farming Review is a self-assessment tool and forms the framework for implementing IFM. In addition the LEAF Sustainable Farming Review provides a great data source to LEAF so we can promote the good work carried out by LEAF members.
- The LEAF Sustainable Farming Review is LEAF's core online tool, can be found in the myLEAF area on the website www.leafuk.org

LEAF and IFM

LEAF Demonstration Farms

- LEAF Demonstration Farms are working farms committed to the sustainable farming practices of IFM.
- These sites proudly demonstrate best practice IFM to a variety of different groups through farm walks, talks and demonstrations.
- Have a look at the LEAF website to find out more about visiting LEAF Demonstration Farms and seeing IFM in action.



LEAF Innovation Centres

- LEAF Innovation Centres research and develop new approaches to push forward the boundaries of IFM.



LEAF Marque

- The LEAF Marque is an assurance system recognising produce that have been grown to LEAF's IFM principles.
- Investment in LEAF Marque certification enables you, the producer, to demonstrate your environmental commitment and provides a genuine commercial advantage in the demanding premium and assured food market.



Open Farm Sunday

- LEAF manages Open Farm Sunday, the farming industry's national open day, and a fantastic opportunity to shout about all the great work you are doing. Visit www.farmsunday.org to get involved.
- Open Farm School Days run alongside Open Farm Sunday and are a great opportunity to get school children out onto farm.



Acknowledgements

This guide has been drawn together by Alice Midmer with contributions from Caroline Drummond, Kathryn Mitchell, Simon Bull and Justine Hards. We would also like to thank the wider industry partners and farmers that kindly contributed to the final text.

Our grateful thanks to Insight Investment for sponsoring the publication of the LEAF IFM Guide.



Copyright: LEAF all rights reserved. None of the materials provided in this publication may be used, reproduced, or transmitted, in whole or in part, in any form or by any means, electronic or mechanical, including photocopying, recording or the use of any information storage and retrieval system, without permission in writing from LEAF. Information presented here is for information purposes only. LEAF grants permission to use information for personal, non-commercial use, without any right to resell or redistribute information or to compile or create derivative works therefrom. August 2014.

The Guide has been compiled to the best of LEAF's knowledge and is provided for information purposes only. LEAF reserves the right to update the Guide as new information becomes available.

The information is provided "as is" and no warranty of any kind is given for the accuracy and reliability of the information. LEAF will not be liable for any claims or damages to the quality and completeness of the information, as far as it is permitted under law.

LEAF (Linking Environment And Farming)
Stoneleigh Park
Warwickshire
CV8 2LG
UK
T: 02476 413911

LEAF is a registered charity (No. 1045781)

© LEAF (Linking Environment And Farming)
Editorial completion: August 2014
A digital version of this report is available at www.leafuk.org

www.leafuk.org
enquiries@leafuk.org

 @LEAF_Farming

 facebook.com/LinkingEnvironmentAndFarming



Our grateful thanks to Insight Investment
for sponsoring the publication of Integrated Farm Management: A Guide