LINKING ENVIRONMENT AND FARMING

Making Every Drop Count: Integrated approaches to more sustainable water management

Water is one of the most critical resources for sustainable agricultural worldwide. Agriculture accounts for around 70% of fresh water used across the globe. 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.

Monitoring, protecting and enhancing water quality are core elements of LEAF's Integrated Farm Management (IFM) principles. IFM is a site specific, whole farm approach, made up of nine sections, which work together to address environmental sustainability across the entire farm business. An understanding of the importance of each section and the interactions between them is essential to managing water wisely.



To support improvements to management of water use and water quality, LEAF farm businesses have a **Water Management Plan** which informs understanding and justification of water sources and water used. It sets out: plans to **reduce** water use and targets to **improve** water quality and water use efficiency such as water saving, reuse and recycling. Alongside this measurement of applied water use efficiency with analysis and justification of any changes with planned improvements, as well as consideration of water sources. Additionally, good irrigation practices, regular monitoring of water meters and active management of land drainage, ditches and drainage from farm building areas are also carried out.

Organisation and Planning

Many other decisions and actions across other areas of IFM also influence water management. LEAF Farmers:



- Complete the **Integrated Farm Management Policy** which includes efficiency and justified resources (e.g. water) use and optimising water efficiency.
- Consider **resource use** and **waste management** in the purchasing and/or design of buildings and/or new equipment.
- Comply with legal requirements
- Have an appropriate **complaints record** with relevant actions allowing stakeholders to bring concerns and the business to take efforts to resolve such issues.
- Consider the business within the **local context** including overall water availability and local water rights.
- **Collaborate** and take collective action at a catchment level

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Soil Management



Protecting soil, building resilience and enhancing performance is key to better water management. IFM advocates a range of soil management strategies such as crop rotations, maintaining cover, appropriate cultivations to save, protect and preserve water. LEAF Farmers:

- Complete a **Soil Management Plan** including the identification of soil types, and map areas prone to compaction, erosion, runoff and leaching, including from irrigation.
- Build up **soil organic matter** as part of building moisture conservation practices
- Carry out **Nutrient Management Planning** – implemented with Manure Management Planning, to identify crop needs and nutrient availability for both organic and inorganic fertilisers
- Develop long-term **cropping plans** and **crop rotations**
- **Assess soil** and conditions prior to operations
- **Train** people in accurate nutrient application; maintain and calibrate equipment which supports the avoidance of contamination of surface and ground water
- Implement **control measures** to minimise the loss of nutrients when applying organic matter
- Maintain **soil cover** e.g. cover crops, retaining soil stubble
- Carefully consider **storage** of inorganic and organic fertilisers

Crop Health and Protection



Crop health and protection is key to maintaining and increasing water efficiencies which are imperative to meeting long term food needs. LEAF Farmers:

- Complete a **Crop Health and Protection Plan** including **Integrated Pest Management** (IPM)
- Consider the **environmental impact** of all crop protection practices including plant protection products (PPPs), mechanical and cultural practices
- Take steps to ensure PPP potential spillage and/or resulting pollution is **prevented** from entering water and the local environment
- Implement procedures for **dealing with spillages** damaging to the environment, people and animals
- **Train staff** in PPP storage, handling, application and disposal of containers; maintenance and calibration of equipment
- Carefully consider **storage** of PPPs
- **Follow recommendations** for PPP use made by competent, qualified persons including consideration of approval, rates, timing of use, precautions to minimise beneficial and non-target species as well as neighbouring businesses and the public

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Pollution Control and By-Product Management



IFM supports farmers in adopting a 'reduce, reuse, recycle' approach to managing the minimising waste and on-farm pollution. It advocates a holistic view, taking into account the economic and environmental value of on-farm waste. LEAF Farmers:

- Identify **potential pollutants** and take steps to reduce or avoid the impact of all pollutant risks to the environment including to soil and water
- Integrate their **Manure Management Plan** with their **Nutrient Management Plan**
- Regularly **maintain and calibrate** equipment and machinery to ensure accurate and efficient application and operation
- Take measures to **minimise waste** through reduce, re-use and recycling
- Make provision for careful and appropriate waste disposal

Animal Husbandry



Sustainable livestock management within the context of IFM means taking a holistic view of the wider environmental impact of livestock production. LEAF Farmers:

- Take measures to **avoid damage to grassland** by livestock and to optimise biodiversity
- **Store organic material**, digestate, compost, silage, silage effluent, slurry and soil organic matter according to best practice and with adequate safe holding capacity
- **Protect and manage** environmentally sensitive areas with consideration to nesting birds and wildlife in grazing and forage cutting

Landscape and Nature Conservation



Landscape and wildlife provide a range of valuable ecosystem services – pollination, clean water and air, and more productive soils. All these services depend on farmers to protect and enhance on farm biodiversity, which in turn, contributes to global natural capital. LEAF Farmers:

- Complete a **Landscape and Nature Conservation Audit** with associated **Conservation and Enhancement Plan** which is an integral part of the farming system including areas of high conservation value, watercourses, water bodies, riparian, wetland and other significant water-related habitats, alongside archaeological and historical sites, management of important, rare, threatened or endangered species and invasive species
- Restrict the timing and frequency of **watercourse management**

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