



Best Practice Water on the farm

Sheet 48.0a

Water on the farm

Why change?

Whatever its source, water is essential to any farming business for drinking, washing, cooling and crop irrigation. Climate Change is increasing the risk of local water resources being insufficient for a farmer's or land manager's needs (water stress). Wise water management includes adding value to the farm business through water storage / holding water on farm where possible. It can also help you to increase productivity, save money and protect the environment by:

- making effective use of water
- reducing costs
- reducing wastage and leaks
- recycling water
- reducing dirty water disposal.



Steps to Success

1. **Read Farming Rules for Water.** From 2 April 2018 new rules, standardising good farm practices for water management by all farmers in England were introduced to help protect water quality.

These rules set minimum requirements for farmers to:

- keep soil on the land
- match nutrients to crop and soil needs
- keep livestock fertilisers and manures out of the water.

2. **Check** whether any area of your farm is in a designated NVZ (Nitrate Vulnerable Zone) as this may require more stringent management practices. Check NVZ locations at <https://environment.data.gov.uk/farmers>

3. **Understand the water use** on your farm including the sources, quantities, seasonality, losses and charges. Aim to protect your future productivity by minimising water input and dirty water disposal costs by:

- reviewing your existing and potential future use of water for irrigation and checking that you are delivering the correct quantities where and when you want it without damage to the soil, crops or the environment. (See sheet 49)
- reducing water loss from leaks, inefficient drinkers or delivery systems, and protecting pipes from frost damage by monitoring water use and checking water facilities as a routine part of farm operations. (See sheet 50)
- recycling water by identifying what sources are available, such as irrigation run-off, cooling water, rainwater or washings, and the purpose for which it could be recycled, e.g., milk cooling water used for parlour washing and stock drinking in winter. (See sheet 51)
- reviewing clean water separation procedures to ensure rainwater does not run to dirty water systems and add to disposal costs, as well as identifying potential recycling uses. (See sheet 52)
- consider alternative water supplies including surface or groundwater, roof and yard run-off for some purposes - rather than mains supplies - to reduce costs and increase flexibility, security and future growth potential. (See sheet 52).

4. **Map the existing water supplies** on the farm and identify potential opportunities to reduce costs, improve efficiency, and protect and enhance your supplies for the future.



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Water on the farm - practical examples

Reducing mains water costs

Large areas of the country have high winter rainfall averaging 1000-1300 mm, much more in some areas, just when stock are indoors. Each square metre (m²) of roof will provide 1-1.3 cubic metres (220 galls) worth approximately £1.91/m³ (South West Water, 2020). NB, please note cost/m³ will vary depending on your water company.

Based on experience from the Tamar catchment, a 200-cow herd housed from November to Easter has average water requirements of some 70 litres/cow/day, a total of 98 m³ per week/5096 m³ per year. For mains water at £1.91 per m³ the annual cost would be £9733.36.

If saving roof water, the cost of providing pumps and plumbing would be about £2000, with a further £3000 if a tank is needed, giving a total of £5000.

The saving will be much larger if all clean roof water is not already diverted from the dirty water systems where it will otherwise increase the cost of waste disposal.

How much benefit you will gain by recycling roof water will depend on local circumstances and particularly whether there is existing storage, i.e., a tank, pond or reservoir, whether a pump is needed and the extent of plumbing, and treatment required.



Dairy farm

In this actual example, a dairy farm with 120 cows has 1500m² of open yard area and silos. The parlour is washed down with a pressure hose. Some roof water also mixes with the dirty water and drains into the collection system of a low rate travelling irrigator.

A review of the sources of dirty water found that repairing gutters and downspouts, diverting some clean yard water, and careful use of the pressure hose could reduce the quantity of dirty water by 1000m³ (37%).

Savings resulted from the reduced costs of water, electricity and labour, as well as wear and tear on the irrigation system. The total saving is estimated at £1400/year. In addition, the risk of water pollution was significantly reduced.



Remember

- Water use can often be reduced by simple and cost-effective changes. Changes to use of existing water sources or new supplies may need an abstraction licence, so consult the Environment Agency (EA). Your local water company may advise on mains water use.
- Raise awareness with all concerned of the need to conserve water, and routinely check for leaks and losses. For further information please contact:
The Rivers Trust: theriverstrust.org/who-we-are/find-your-local-trust;
the EA: gov.uk/government/organisations/environment-agency; or Catchment Sensitive Farming: gov.uk/guidance/catchment-sensitive-farming-reduce-agricultural-water-pollution



The Rivers Trust



This information sheet is part of a series produced by Westcountry Rivers Trust providing farmers with advice on land management practices to protect water bodies. The advice enables farmers to use farm resources more efficiently, helping to meet Nitrate Vulnerable Zone, Cross Compliance, Farming Rules for Water and other regulations while protecting our environment and natural resources.

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