Environment Agency

Evidence

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Rural Sustainable Drainage Systems (RSuDS)

A new report by the Environment Agency explores different options for farmers and land managers to build sustainable drainage systems on their land, to help reduce the risk of flooding and pollution. While there is no specific legislation to ensure that issues of sustainability are considered with regard to agricultural systems, sustainable drainage systems (SuDS) have already been encouraged and successfully applied in the urban environment. Rural Sustainable Drainage Systems (RSuDS) are a collection of physical structures and techniques where the natural environment is used to help reduce diffuse agricultural pollution and flood risk.

The report sets out to:

- create an inventory of SuDS measures for agricultural systems;
- review studies on the cost-effectiveness of proposed measures;
- review the evidence base to justify policy support for the adoption of rural SuDS;
- provide the basis for a technical guidance document for farmers and land managers to install rural SuDS that are effective and beneficial to the environment.

Traditional drainage to manage surface water run-off is designed to carry water away quickly, without treatment, and can rapidly transfer pollutants and large volumes of water to streams, rivers, lakes and estuaries. Rural SuDS slow down or prevent the transport of pollutants to watercourses by breaking the delivery pathway between the pollutant source and the receptor. By intercepting run-off and trapping sediment before it leaves the field they help maintain and manage the provision of good water quality by preventing the loss of soil, chemicals, nutrients and faecal organisms. A further benefit is their ability to temporarily capture water and slow down flow. This can reduce localised flooding and provide valuable aquatic habitats in the form of micro-wetlands for farmland wildlife.

The report provides a list of existing land management options that fit the definition of sustainable drainage and reviews their effectiveness in helping to improve water quality, reduce flood risk and adapt to climate change. Options explored in the report include sediment traps and trenches, wetlands, retention ponds and buffers.

Addressing the problem at the source, for example by removing soil compaction, should always be the first step of tackling diffuse agricultural pollution. Rural SuDS offer a second line of defence, and should be used as part of the solution. The measures identified in this report offer some answers to tackling diffuse pollution to improve the chemical and ecological status of surface water in the short to medium term, whilst in the longer term, they should enable land managers to adapt to more intensive rainfall events that are more likely to occur with our changing climate.

This summary relates to information reported in detail in the following output:

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