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SOWAP launched to protect soil and water

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Loss of soil from farm fields is choking some of Europe's rivers to death. In Flanders, 300.000 tonnes of soil are washed into river and drainage systems annually.

The results are blocked arteries that increase the risk of floods. Excessive weed and algal growth encouraged by washed out nitrate and phosphate, which starves river water of oxygen. Vital gravel-bed spawning grounds of fish are being caked with mud.

Furthermore, the long-term economic viability of arable farming on vulnerable land is being seriously eroded.

Now, a major new Europe-wide project will identify some of the significant changes in farming practice that have led to an alarming increase in the rate of soil erosion. It will provide crucial practical answers to halt further soil loss and integrate solutions to counter impacts on the local environment and ecology.

The **SOil and WAter Protection (SOWAP)** project aims to develop sustainable arable systems for farmers, along with the scientific evidence to support European agricultural and environmental policy decisions.

The three-year, €4m, project - funded equally by the EU Life programme and Syngenta, supported by other industrial partners - includes the installation of innovative high-tech monitoring equipment on test sites that will physically catch and record the rates of soil loss from arable farming practices.

For the first time, we will be able to physically quantify the rate of soil loss and test a range of options for farmers to reduce soil erosion, under practical field conditions. The results will help farmers to plan and mitigate the effects of soil loss, so reducing the impacts downstream.

Additionally, it will also assess the economic consequences of any changes, which will enable policy makers to implement a workable legislative framework. Having addressed protection of air and water from pollution, soil is the next major element to be tackled under EU policy.

The SOWAP project will be based on one site in Flanders (Huldenberg). Allied to the host site, will be a satellite network of local farms to implement and verify the best practices.

The Belgian model will be replicated on test sites in the U.K. and Hungary, as well as being allied to a coordinating network of soil erosion monitoring in France, Italy and southern Europe. The SOWAP project will build a very comprehensive picture of soil erosion across Europe, the results of which will be closely integrated with objectives of the EU Water Framework Directive.

In parts of Europe the future viability of some of the most prestigious vineyards and productive olive groves is now under serious threat. A series of violent weather patterns have exacerbated the problem; it is possibly too late to save some growers' livelihoods. With SOWAP we can find some solutions to avoid the problem besetting arable farming. Syngenta fully supports the project's vision and objectives, and is backing the project with significant financial commitment.

The rate of soil loss, and the associated problems, can be greatly exacerbated by some farming practices. It is crucial farmers work closely with the project from the outset and adopt some of the measures now that will protect against further soil erosion.

At each SOWAP project site high-tech testing platforms have been built to compare rates of soil erosion from arable cropped fields established with conventional autumn ploughing and cultivations, alongside those established by 'Conservation-Tillage' equipment - where weeds and the residue of previous crops are sprayed off with herbicide, and the new crop drilled into uncultivated topsoil.

A third crop will be established by the project team's 'best practice' for the particular site, which will be a combination of cultivation techniques judged the most appropriate for the soil conditions and crop.

All the sites will be tailored with cultivation and establishment techniques pertinent to local farms and local conditions, since no two situations will ever be the same. The emphasis is on providing flexible solutions that local farmers will be prepared to adopt.

We believe that, with the right soil management techniques, growers can redress further soil loss, and reverse the trend to create sustainable farming systems.

By not ploughing soils, improvements in the topsoil structure will allow more water to be absorbed during heavy rain and significantly reduce erosion. This improvement in soil structure will increase microbial activity and earthworm populations, while retention of arable crop stubbles and changes in weed populations could produce more seed-bearing annuals. The benefit to farmland birds of more earthworms, seeds and insects could be immense. The SOWAP Project will involve studying indicator species from microbes to farmland birds.

The SOWAP project is match funded through the EU Life programme, with a partnership led by Syngenta, Vaderstad, WOCAT, Hungarian Academy of Science and Leuven University in Belgium. Team participants also include the RSPB, National Trust, FWAG, Ponds Conservation Trust, National Soils Resources Institute (NSRI), Harper Adams University College and The Allerton Trust.

The project runs until 2006, by which time the European Commission will have launched its soil strategy and the SOWAP Project will, we hope, have some answers.