Measures and instruments for reduced environmental load from cereal production

STRAPP is a three-year research project addressing the conflicting concerns arising from measures aimed at remediating pollution from pesticides and soil loss/phosphorus in cereal production. The project aim to identify the 'best' measures for reducing pollution in cereal production considering both environmental, economical and behavioural aspects, as well as ways to increase their adoption within the farmer community.

Background

The Water Framework Directive and the Framework Directive for Sustainable Use of Pesticides have put reduction of pollution from agriculture on the agenda. To fulfil the goals set here there is a need to:

- clarify the conflicting concerns arising from measures aimed at remediating pollution from pesticides and soil loss/phosphorus
- evaluate the effects of measures to reduce pollution on the economy in agriculture
- design instruments aimed at the adoption of the most cost-effective measures to reduce pollution from agriculture

The STRAPP-project (2013-2015) will address all the above aspects with a focus on cereal production. Cereal crops cover large areas and the implementation of measures here will potentially have a larger effect than in crops covering smaller areas.

Output and activities

The main output of the project will be knowledge on how to efficiently implement the 'best' suite of pollution-reducing measures in cereal production.

The project work will be done in six integrated work-packages, with activities focused on:

(i) optimizing plant protection practices (e.g. soil tillage, forecast systems, precision spraying, risk maps)
(ii) monitoring, modelling, understanding and reducing the risk of pesticides, phosphorus and soil loss on field and catchment scale
(iii) Understanding and modelling farmer behaviour
(iv) assessing the potentially conflicting concerns from reducing soil erosion, nutrient loss, and pesticide pollution, and optimizing farm economy
(v) developing instruments for increased adoption of desirable ('best') management practices.

Field site

The Skuterud catchment located in South-East Norway will be a common research arena for all WPs. Being one of the catchments in the Norwegian Agricultural Environmental Monitoring Programme - JOVA - a continuous data-series (1992-present) of discharge-measurements and concentration levels of nutrients, particles and pesticides from the Skuterud stream is available. The farmers have recorded their activities (fertilization, use of pesticides, soil tillage, yield etc.) on the fields during the monitoring period. Together with the results from the project field studies, these data will enable the design of measures and instruments properly aimed at reducing pollution in cereal production.

Stakeholder involvement

The Norwegian Agricultural Authority, the Food Safety Authority and the Extension Service will be linked to the project as part of a reference group receiving regular project updates. The assessment of potentially conflicting concerns (iv) will involve focus group discussions with these parties and representatives of the farmer associations.

Partners and funding

The project is co-ordinated by Bioforsk, with work-package leaders from the main partners Bioforsk and NILF. The project work is done in collaboration with researchers at the Norwegian Forest and Landscape Institute (NO), the Swedish University of Agricultural Sciences (SE), the Julius Kühn Institute (DE), Thünen Institute for Regional Development (CH), and the University of Copenhagen (DK).

The project is funded by the Norwegian Research Council project no. 221394/E40.

All photos: Bioforsk, the JOVA-program

Project information will be made available at: www.bioforsk.no/strapp