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Agricultural and Food Science - abstract



Vol. 16 (2007), No. 4, p. 282-300

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Influence of EU policy on agricultural nutrient losses and the state of receiving surface waters in Finland

Keywords Agriculture, eutrophication, nutrients, water quality, runoff, rivers, lakes, estuaries, climate change,

Abstract

In Finland, the first large-scale efforts to control nutrient loading from agriculture got under way with the introduction of the EU Agri-Environmental Program in 1995. We examined whether these efforts have decreased agricultural nutrient losses and improved the quality of receiving waters. To do so we used monitoring data on fluxes of nutrients and total suspended solids in agricultural catchments in 1990–2004 and on the water quality of agriculturally loaded rivers, lakes and estuaries in 1990–2005. No clear reduction in loading or improvement in water quality was detected. Hydrological fluctuations do not seem to have eclipsed the effects of the measures taken, since there was no systematic pattern in runoff in the period studied. The apparent inefficiency of the measures taken may be due to the large nutrient reserves of the soil, which slowed down nutrient reductions within the period studied. Simultaneous changes in agricultural production (e.g. regional specialisation) and in climate may also have counteracted the effects of agri-environmental measures. The actions to reduce agricultural loading might have been more successful had they focused specifically on the areas and actions that contribute most to the current loading.

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Update 11.3.2008.

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