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Climate mitigation co-benefits from sustainable nutrient management in agriculture – incentives and opportunities

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Abstract

This paper explores the opportunities for sustainable nutrient management in agriculture with climate mitigation benefits relating to nitrous oxides in particular. The nitrogen management policies introduced in the past decades by some OECD countries have managed to reduce the use of mineral fertilisers by making better use of manure-nitrogen. As mineral fertilisers have a large greenhouse gas footprint and to achieve the deep reductions in emissions as the Paris Agreement aims for, such policies could be reinforced and pursued more systematically. The paper identifies a significant reduction potential by eliminating excess use of nitrogen fertilisers and improving the efficiency in the use of manure-nitrogen, which could be obtained with a redesign of nitrogen management policies and schemes for public financial support. To underpin such measures a tax on the nitrogen surplus at farm level could play a vital role.