

Regulation of emissions from agriculture and LULUCF

Authors and affiliation:

Louis Birk Stewart, DREAM

Asbjørn Kehlet Berg, DREAM

A carbon tax on emissions from agriculture and Land Use, Land Use Change and Forestry (LULUCF) is widely regarded as a necessary tool for Denmark to achieve its reduction obligations for greenhouse gases. The present study assesses the impact of levying a carbon tax on agricultural- and LULUCF emissions in Denmark and finds that a combination of a carbon tax of 50 EUR per tCO₂e, with subsidies for emissions-reducing technologies, is expected to provide roughly three quarters of the remaining national reduction requirement in 2030. These results are based on the GreenREFORM model – a dynamic multisector model focused on describing the interaction between economic and environmental policies. As a significant portion of the reductions are achieved through a drop in production in the agricultural- and food processing sectors, the results are crucially reliant on what assumptions are made about the market structures of these sectors. This includes, in particular, the levels of export elasticities they face, and what the expectations are for future prices. The study investigates, through a series of sensitivity analyses, the consequences on emission reductions of alterations of these assumptions.