

THE OCEAN



Policy in practice

CO-BENEFITS OF MANAGING NITROGEN POLLUTION IN DENMARK

Region: [Europe](#)

Country: [Denmark](#)

Tags: [Nitrogen](#) | [Regulation](#) | [Water quality](#)

Themes: [Climate change](#) | [Pollution](#)



Zero hunger



Clean water and sanitation



Climate action



Life below water

Policy in practice

Existing policy analysis tends to assess the performance of a policy instrument against the criteria of cost-effectiveness in meeting set objectives. Such methods often recommend the use of pricing tools as cost-minimising solutions to reduce the emission of a given pollutant. However, such a view neglects the ability to address the side effects of a policy, such as environmental co-benefits.

Examining co-benefits can be an important way of maximising a policy's impact across multiple policy objectives. Take the example of emission reductions: the farming practices causing emissions of nitrogen and greenhouse gases (GHGs) overlap to a large extent. When the agricultural emission of nitrogen is reduced to meet nitrogen policy targets, it may lead to a reduction of GHGs emissions from agriculture at no extra cost to society. The EU Water Framework Directive (2000/60/EC) sets good ecological status targets for all surface waters and groundwater, to be achieved no later than 2027. In Denmark this was translated into a set of geographically differentiated reduction targets for nitrogen loads to coastal waters and groundwater. The fulfilment of these nitrogen targets is projected to also reduce the agricultural emission of GHGs by up to two million tonnes by 2027.

Under current climate commitments, Denmark must reduce emissions of GHGs in sectors of the economy that fall outside the scope of the EU Emissions Trading System (ETS) by 39% in 2030, compared to 2005. Based on a projection of emissions by the Danish Energy Agency from 2017, it is estimated that emissions in the year 2030 must be reduced by 2.5 million tonnes in order to reach this target. Fulfilment of the EU Water Framework Directive means that there is only a modest need of further reductions in the Danish non-ETS sector in order to reach the target. Even though the estimate of the effect of fulfilling the Water Framework Directive is quite uncertain, the results illustrate that the level of nitrogen regulation can have a high impact on the total emissions of GHGs.

Source report

[OECD \(2018\), Human Acceleration of the Nitrogen Cycle: Managing Risks and Uncertainty, OECD Publishing, Paris.](#)

Key policy message

Examining co-benefits can maximise policy impact across multiple policy objectives.

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