

Application standards vs Nitrogen Surplus in regulation in the EU

- Nitrogen regulation in Germany, The Netherlands and Denmark

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Abstract

In the Netherlands, the MINAS system was used to fulfil the requirements in the Nitrate Directive. However, the progress was too slow and so this has changed to an input based N-application system as used in Denmark. Germany seems now to be on the same route. This paper discusses the use of N-surplus vs N-input in regulation. The conclusion is that the problem is not so much the use of the balance method in itself, but more the regulatory setup. With tighter limits, fewer loopholes and more control the balance method can also reach the targets in the Nitrate Directive.

Keywords: Nitrogen regulation, Nitrate Directive, N-surplus, control

1. Introduction

The Nitrate Directive has a maximum application of N from livestock is 170 kg N per ha and it states that efforts to ensure high water quality should be implemented.

In the Netherlands (NL) the regulation (MINAS) in 1998 was based on a calculation of the N and P surplus. That system was later abolished as the EU commission found that the progress in environment quality was too slow and that it did not live up to the requirements in the Nitrate Directive (Grinsvan et al., 2012).

In Germany the N-regulation has up until now been based on an N-surplus of 60 N per ha. This was last year lowered to 50 kg N per ha in most areas and 40 kg N per ha in selected areas when ground water quality hot spots with high nitrate levels. The EU court have in 2018 found that this change is not enough. And so new measures are discussed in the Autumn 2019 which might include a change to an input system as used in Denmark (Kuhn, 2017).

The purpose of this paper is to compare the regulatory framework based on N-balance as used in NL in the past and Germany today with the N-input system as has been used in Denmark and is being used in the Netherlands today.

Does the input based system in itself provide better environmental protection than the N-balance method? The paper will look closer at selected parameters such as N-levels for selected crops using the two systems, the documentation regarding farming and the control.

2. Results

The analyses show that both the Dutch and the German balance approach allowed for too large surpluses. The regulation furthermore allowed for large applications as e.g. the output N was overestimated. Lack of control with manure transportation in the Netherlands and the yield in forage crops in Germany was a key problem. Also the

fact that degassed manure was not included in the calculation in Germany was a problem. For farms with an N-surplus above the limits the impact was limited. The Dutch MINAS had perhaps found effectfull balance levels when it was abolished and the levels set in the German 2017 regulation might improve water quality, but the delay in the decision proces has meant more active measures are required as the patience from the EU commission has expired.

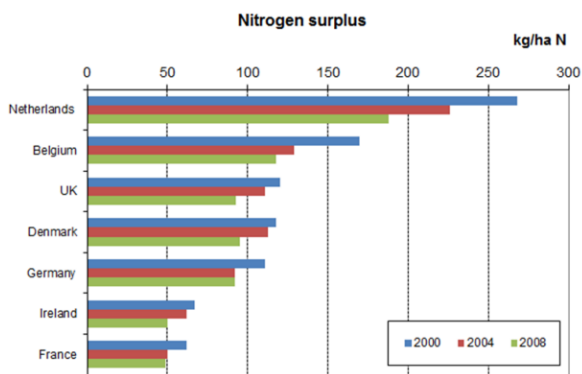
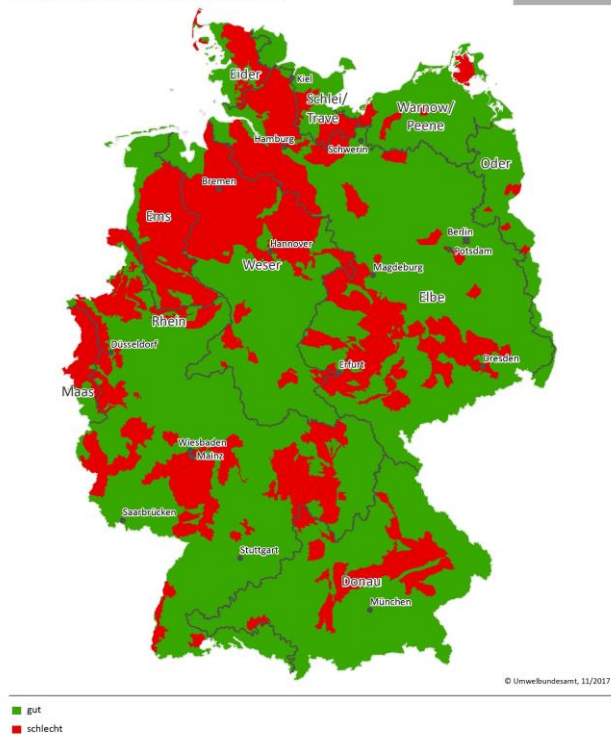


Fig. 1. Gross annual nitrogen balance between 2000 and 2008 (Eurostat, 2011).

Source: Grinsvan et al. (2012)

Grundwasserkörper in Deutschland, die aufgrund von Nitratbelastungen in einem schlechten chemischen Zustand sind



Geobasisdaten: GeoBasis DE / BfG 2015
 Fachdaten: Berichtsjahr Wasser-Blick/BfG, Stand 23.03.2016
 Bearbeitung: Umweltbundesamt, Bund/Länderarbeitsgemeinschaft Wasser (LAWA)

Figure 2. Share of area with groundwater levels over 50 mg NO3/l in 2017 (red).

Source: Umweltbundesamt (from 2017)

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