

The dNmark Research Alliance

- *insights from Denmark*



By Tommy Dalgaard, Head of Research Alliance

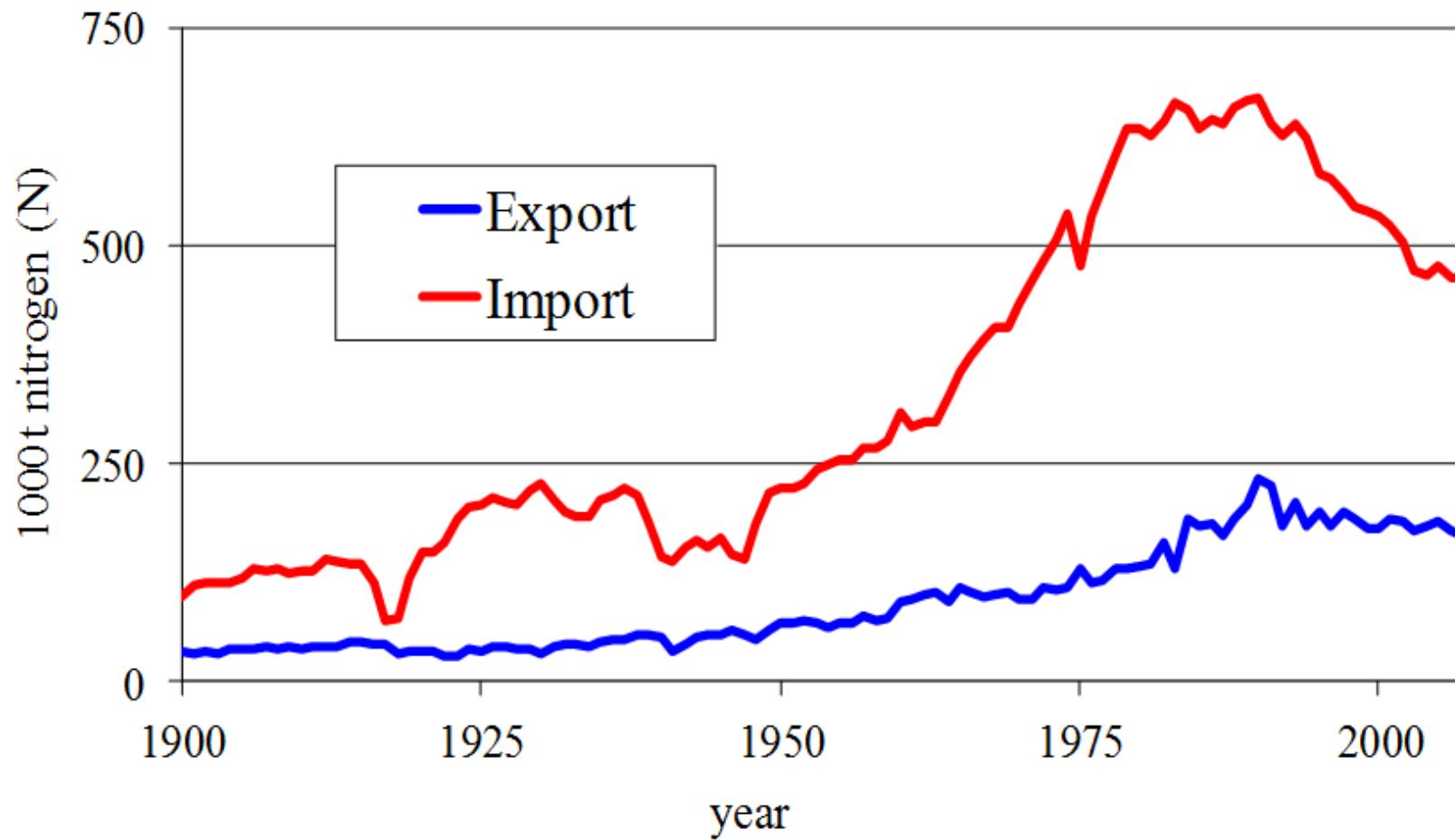
Aarhus University, Department for Agroecology. Contact: tommy.dalgaard@agro.au.dk

International Conference: Ressource efficiency in practice

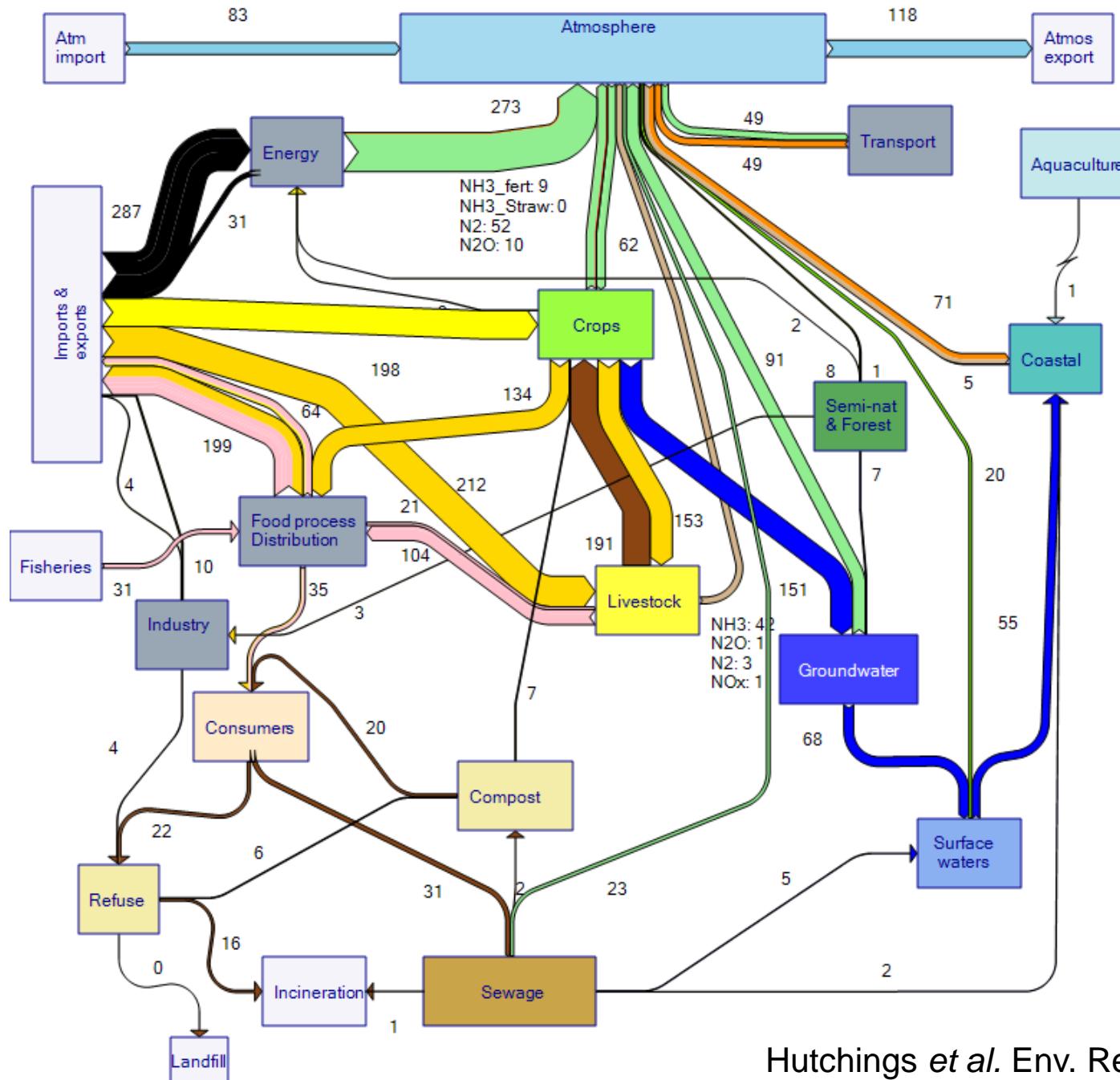
- Closing mineral Cycles. Effectively addressing the nutrient surplus in Europe.

Halles de Tanneurs, Brussels, Belgium. Nov. 18 2014.

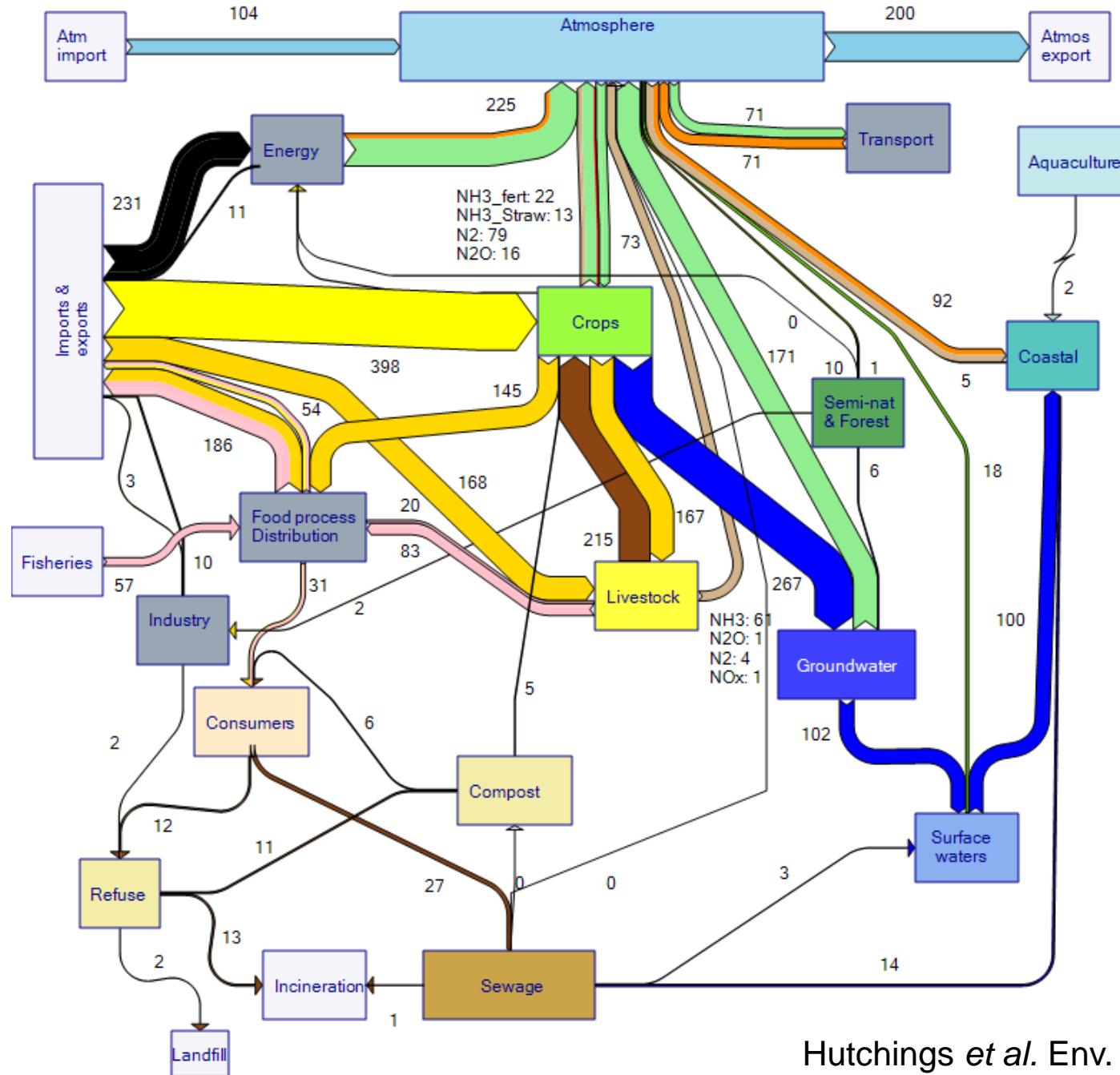
N-efficiency in Danish Agriculture



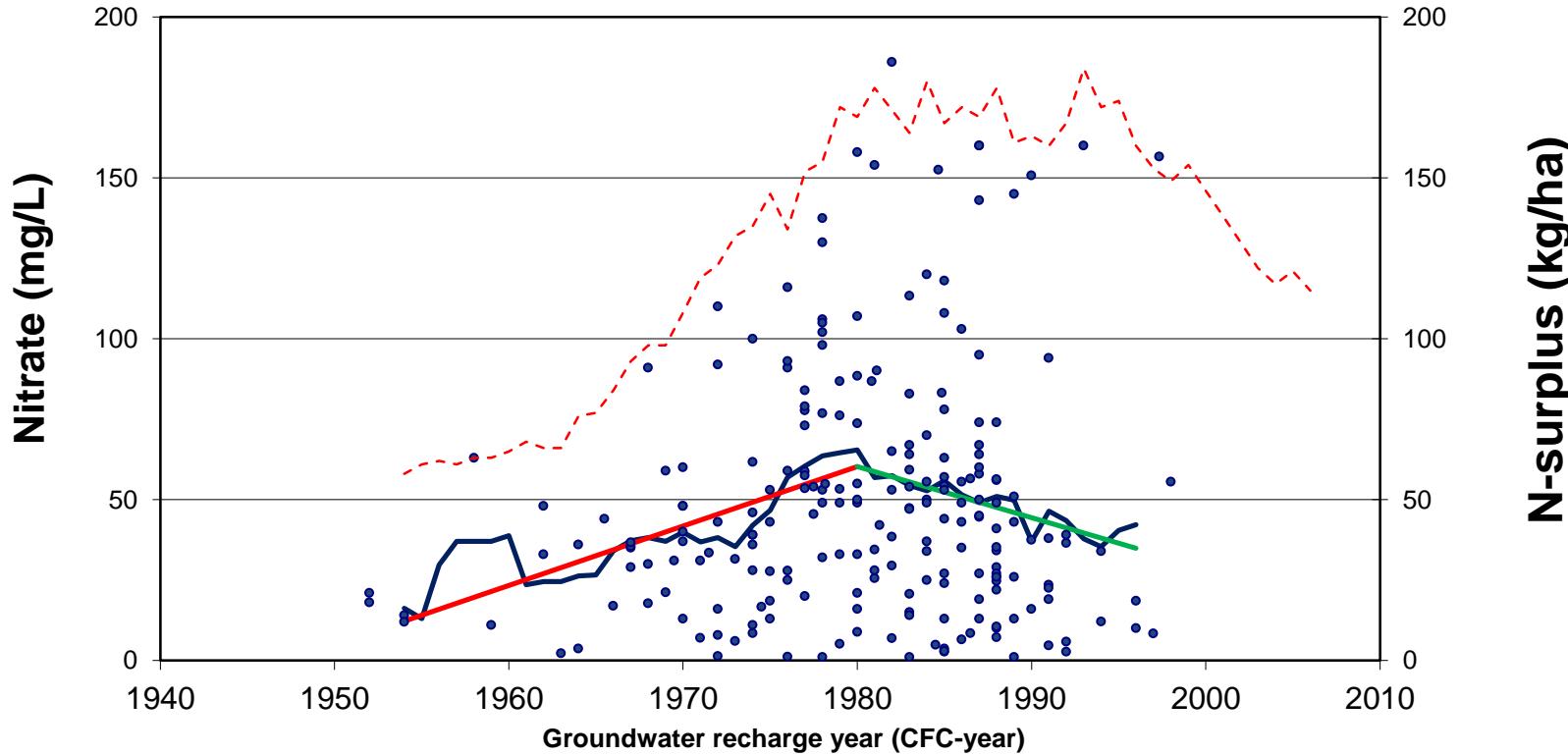
2010
kt N år⁻¹



1990
kt N yr⁻¹



Farm N balance & N-leaching

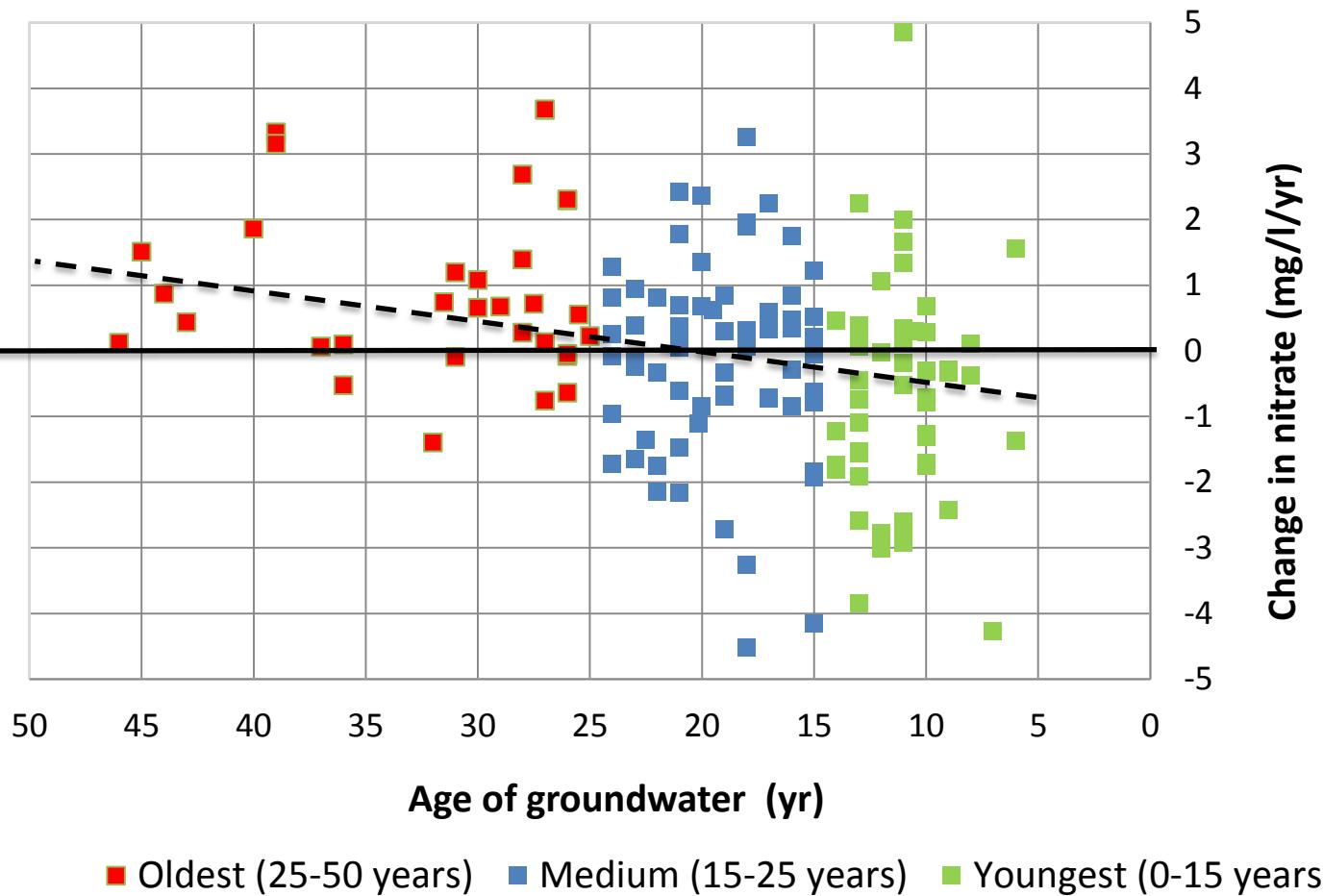


- Nitrate in oxic groundwater (nitrate > 1 mg/l, iron < 0.2 mg/l & oxygen > 1 mg/l)
- Moving average of nitrate in groundwater
- Upward nitrate trend
- Downward nitrate trend
- - - N surplus in agriculture

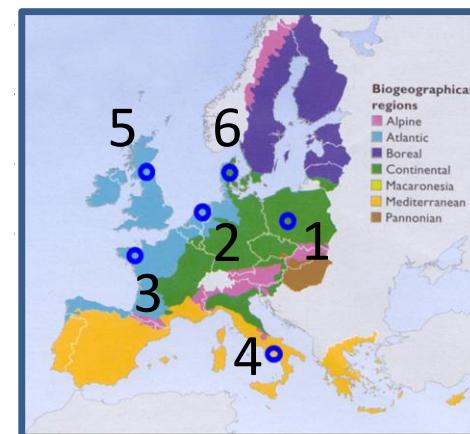
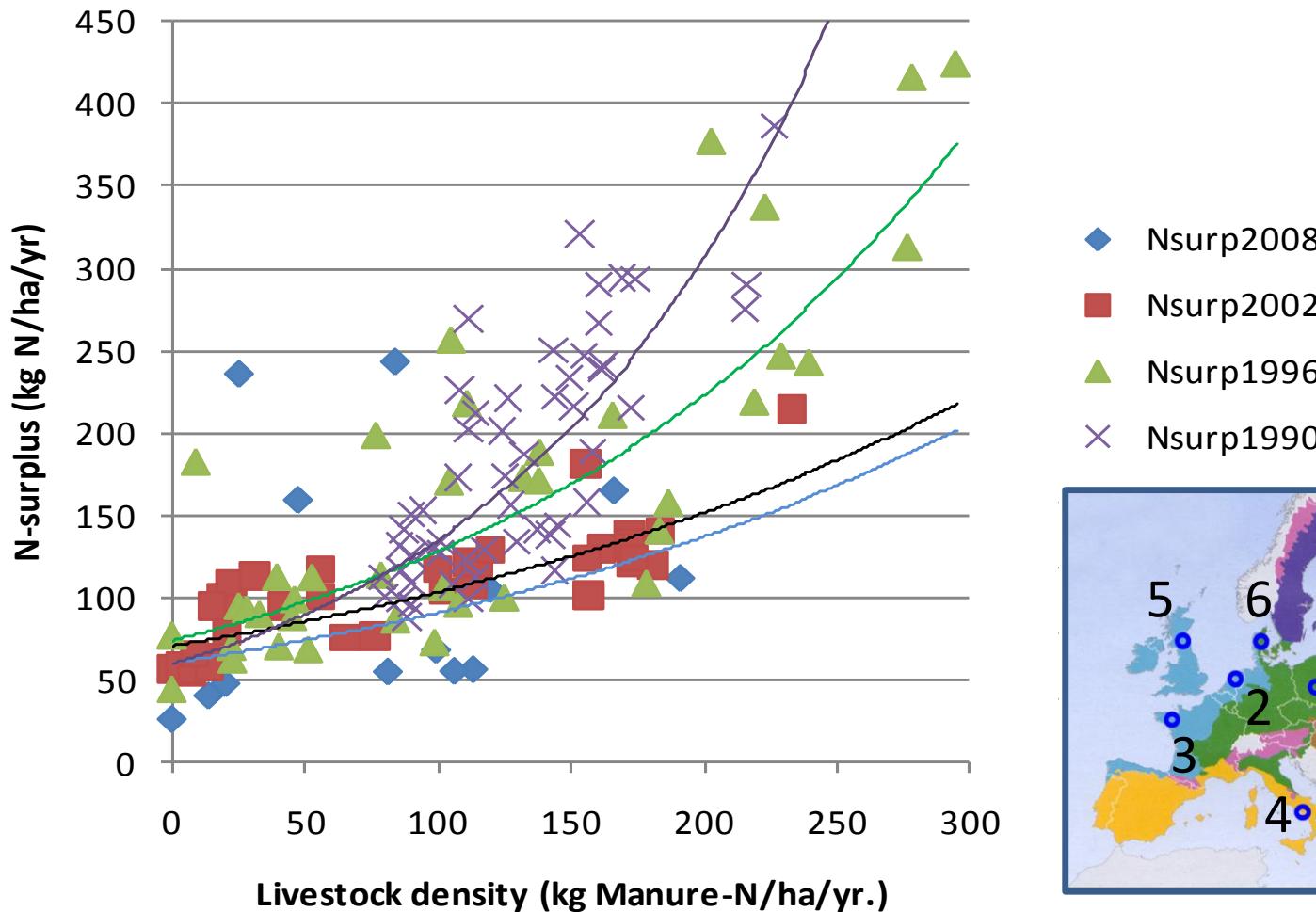
Downward nitrate trend

Upward
nitrate
trend

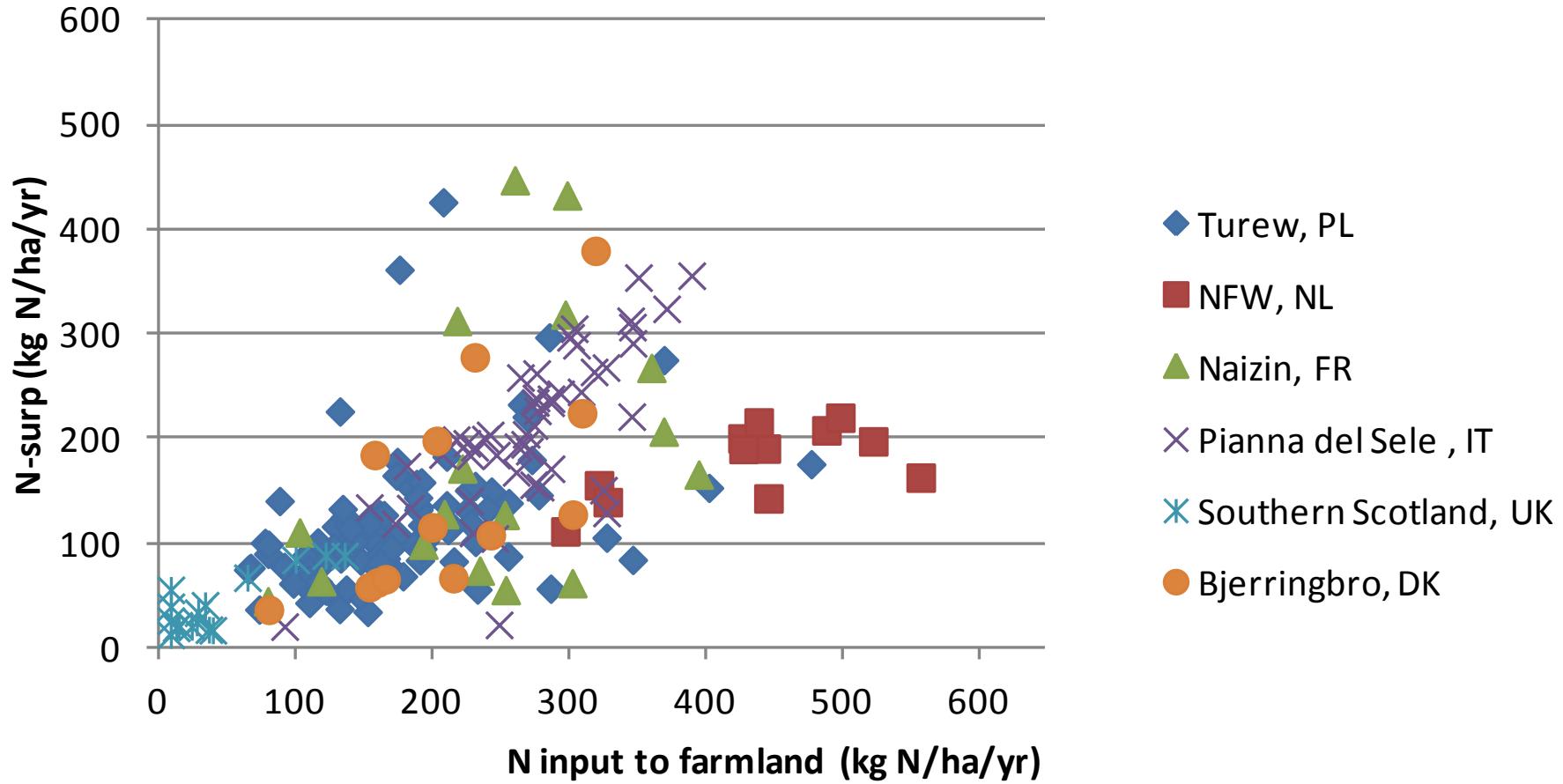
Down-
ward
nitrate
trend



Danish Farm N surplus Development and Variation



European farm N surplus



Policies for agricultural nitrogen management—trends, challenges and prospects for improved efficiency in Denmark

Tommy Dalgaard¹, Birgitte Hansen², Berit Hasler³, Ole Hertel³,
Nicholas J Hutchings¹, Brian H Jacobsen⁴, Lars Stoumann Jensen⁵,
Brian Kronvang⁶, Jørgen E Olesen¹, Jan K Schjørring⁵,
Ib Sillebak Kristensen¹, Morten Graversgaard¹, Mette Termansen³ and
Henrik Vejre⁷

¹ Aarhus University, Department of Agroecology. Blichers Allé 20, DK-8830 Tjele, Denmark

² Geological Survey of Denmark & Greenland—GEUS. Lyseng Allé 1, DK-8270 Højbjerg, Denmark

³ Aarhus University, Department of Environmental Sciences, Frederiksborgvej 399, DK-4000 Roskilde, Denmark

⁴ University of Copenhagen, Department of Food and Resource Economics. Rolighedsvej 25, DK-1870 Frederiksberg C, Denmark

⁵ University of Copenhagen, Department of Plant and Environmental Sciences. Thorvaldsensvej 40, DK-1871 Frederiksberg C, Denmark

⁶ Aarhus University, Department of Bioscience. Vejlsøvej 25, DK-8600 Silkeborg, Denmark

⁷ University of Copenhagen, Department of Geosciences and Natural Resource Management. Rolighedsvej 23, DK-1858 Frederiksberg C, Denmark



The dNmark.org research alliance

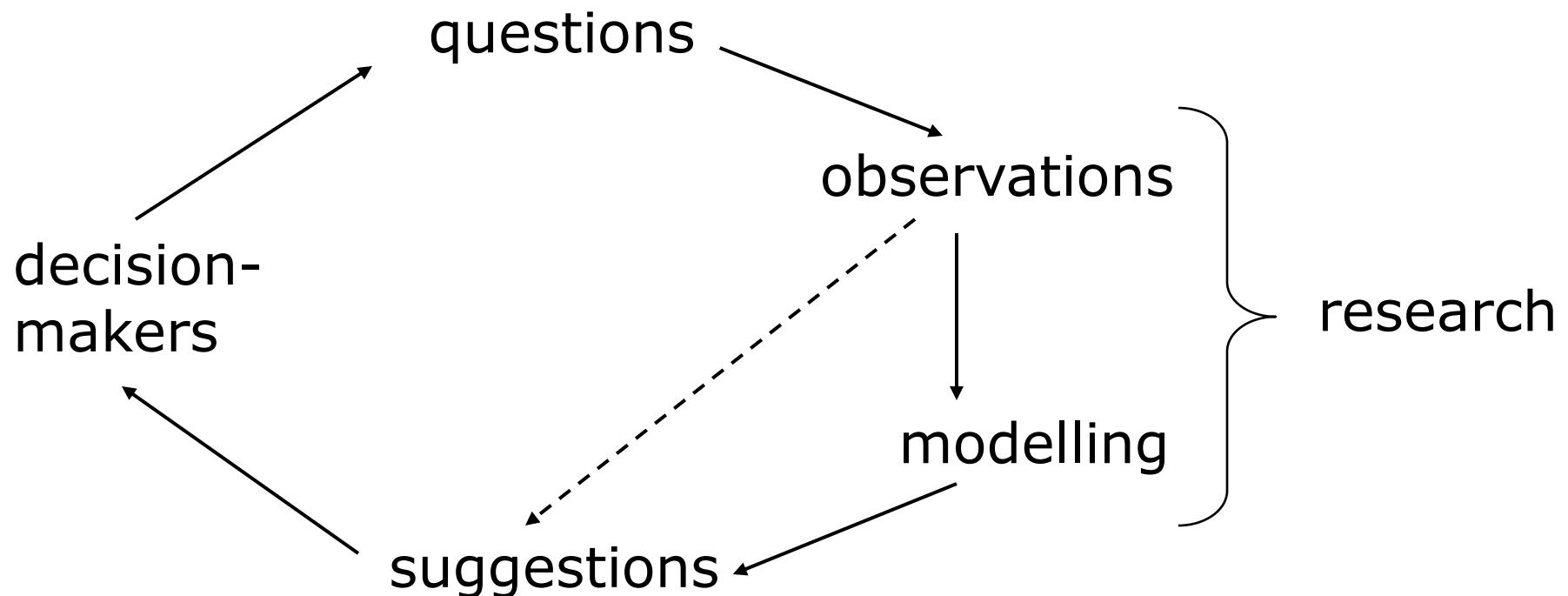
Innovative solutions for a

SUSTAINABLE MANAGEMENT OF NITROGEN IN AGRICULTURE



A QR code is located in the bottom left corner of the lightbulb image.

The cycle of applied research



Adapted from Bierkens (2000)

It is all about a balanced approach!

